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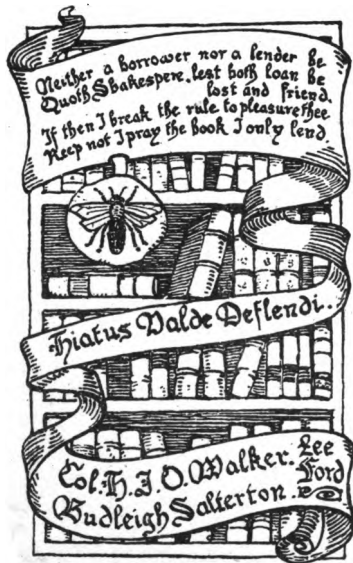
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The author of this scholarly Tract
was The Revd Thomas James M.A.,
Hon.^{ry} Canon of Peterborough.

He can hardly have been an experienced
bee-master, as he had never seen a dead
queen bee till one was sent him by post
see page 87.

Another proof is the impractical and
unsympathetic light in wh. he treats
of Drones on the following page; much
in the same style as Masterlinck.

H.P.O.W.

THE
H O N E Y B E E.

REPRINTED FROM THE 'QUARTERLY REVIEW.'

Dec: 1842.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1852.

LONDON ; PRINTED BY W. CLOWES AND SONS, STAMFORD STREET.

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THE HONEY-BEE.

How the little busy bee improves each shining hour—makes hay when the sun shines—makes honey, that is, when flowers blow—is not only a matter for the poet and the moralist, and the lover of nature, but has become an important subject of rural, and cottage, and even political economy itself. If West Indian crops fail, or Brazilian slave-drivers turn sulky, we are convinced that the poor at least may profit as much from their bee-hives as ever they will from the extracted juices of parsneps or beet-root. And in this manufacture they will at least begin the world on a fair footing. No monopoly of capitalists can drive them from a market so open as this. Their winged stock have free pasture—commonage without stint—be the proprietor who he may, wherever the freckled cowslip springs and the wild thyme blows. Feudal manors and parked royalties, high deer-fences and forbidding boundary belts, have no exclusiveness for them; no action of trespass can lie against them, nor are they ever called upon for their certificates. But if exchange be no robbery, they are no thieves: they only take that which would be useless to all else besides, and even their hard-earned

store is but a short-lived possession. The plagiarist Man revenges himself on them for the white lilies they have dusted and disturbed, and makes all their choicely-culled sweets his own. But though he never tasted a drop of their honey, the bees would still accomplish the work that Providence has allotted them in fructifying our flowers and fruit-blossoms, which man can at the best but clumsily imitate, and in originating new varieties which probably far surpass in number and beauty all that has been done by the gardening experimentalist. Florists are apt to complain of the mischief the bee does in disturbing their experiments and crossing species which they wish to keep separate; but they forget how many of their choicest kinds, which are commonly spoken of as the work of chance, have in reality been bee-made, and that, where man fructifies one blossom, the bee has worked upon ten thousand.

It is certain, however, that the great interest taken in bees from the earliest times, and which, judging from the number of books lately published, is reviving among us with no common force, has arisen chiefly from the marked resemblance which their modes of life seem to bear to those of man. Remove every fanciful theory and enthusiastic reverie, and there still remains an analogy far too curious to be satisfied with a passing glance. On the principle of "*nihil humani à me alienum*," this approximation to human nature has ever made bees favourites with their masters. And theirs is no hideous mimicry of man's follies and weaknesses,

such as we see in the monkey tribe, which is too much of a true satire to afford unalloyed amusement: their life is rather a serious matter-of-fact business, a likeness to the best and most rational of our manners and government, set about with motives so apparently identical with our own, that man's pride has only been able to escape from the ignominy of allowing such humble creatures a portion of his monopolized Reason, by assigning them a separate quality under the name of Instinct. The philosophers of old were not so jealous of man's distinctive quality; and considering how little at the best we know of what reason is, and how vain have been the attempts to distinguish it from instinct, there may be, after all, notwithstanding the complacent smile of modern sciolists, as much truth, as certainly there is poetry and charity in Virgil, who could refer the complicated and wonderful economy of bees to nothing less than the direct inspiration of the Divine Mind.

Bees indeed seem to have claimed generally a greater interest from the ancients than they have acquired in modern times. De Montford, who drew "the portrait of the honey-fly," in 1646, enumerates the authors on the same subject, up to his time, as between five and six hundred! There are, to be sure, some apocryphal names in the list—Aristæus, for instance—whose works were wholly unknown (as he himself assures us) to Mr. Huish; a fact which will not surprise our readers when we introduce him as the son of Apollo, and the father of

Actæon, the “peeping Tom” of mythological scandal. Aristæus himself was patron of bees and arch-bee-master; but no ridicule thrown on such a jumble of names as that given by De Montford must make us forget the real services achieved in this, as in every other branch of knowledge, by one among the number, the Encyclopædiast Aristotle—the pupil of him who is distinguished as the “Attic Bee;” or the life of Aristomachus, devoted to this pursuit; or the enthusiasm of Hyginus, who, more than 1800 years before Mr. Cotton, collected all the bee-passages which could be found scattered over the pages of an earlier antiquity.

Varro, Columella, Celsus, and Pliny have each given in their contributions to the subject, and some notion may be formed of the minuteness with which they entered upon their researches from a passage in Columella, who, speaking of the origin of bees, says, that Euhemerus maintained that they were first produced in the island of Cos, Euthronius in Mount Hymettus, and Nicander in Crete. And, considering the obscurity of the subject and the discordant theories of modern times, there is perhaps no branch of natural history in which the ancients arrived at so much truth. If since the invention of printing authors can gravely relate stories of an old woman who, having placed a portion of the consecrated elements at the entrance of a bee-hive, presently saw the inmates busy in creating a shrine and altar of

* “Hyginus veterum auctorum placita secretis dispersa monumentis industriè collegit.”—*Col.* ix., ii. 1.

wax, with steeple and bells to boot, and heard, if we remember rightly, something like the commencement of an anthem*—we really think that they should be charitably inclined to the older bee-authors, who believed that they gathered their young from flowers, and ballasted themselves with pebbles against the high winds.†

We shall have occasion to show as we proceed how correct in the main the classical writers are on the subject of bees, compared with other parts of natural history; but the book of all books to which the scholar will turn again and again with increased delight, is the fourth Georgic. This, the most beautiful portion of the most finished poem of Roman antiquity, is wholly devoted to our present subject;

* There was lately published in a weekly newspaper the notes of a trio, in which the old Queen and two Princesses (of the hive) are the performers, the young ladies earnestly begging to be allowed to take an airing, while the old duenna as determinedly refuses. This apianian "Pray, goody, please to moderate" grows louder and thicker, "faster and faster," till at last the young folks, as might be expected, carry the day; "and what I can nearest liken it to," says the writer, "is a man in a rather high note endeavouring to repeat, in quaver or crotchet time, the letter M, with his lips constantly closed." This is a tolerably easy music-lesson: let our readers try. The fact, however, is that all this music is originally derived from a curious old book—"The Feminine Monarchy, or the History of Bees," by Charles Butler, of Magdalen (Oxford, 1634): at p. 78 of which work this "Bees' Madrigal" may be found, with notes and words. Old Butler has been sadly rifled, without much thanks, by all succeeding bee-writers. He has written upon that exhaustive system adopted by learned writers of that time, so that nothing that was then known on the subject is omitted. Butler introduced eight new letters—aspirates—into the English language, besides other eccentricities of orthography; so that, altogether, his volume has a most outlandish look.

† The latter mistake arose probably from the mason-bee, which carries sand wherewith to construct its nest. For an account of the 145 varieties of English bees consult Kirby's "*Monographia Apum Angliæ*."

and such is the delightful manner in which it is treated, and so exquisite the little episodes introduced—the Corycian veteran's cottage-garden, the wanderings of Aristæus, the fate of Eurydice—that it would amply repay (and this is saying a good deal) the most forgetful country gentleman to rub up his schoolboy Latin, for the sole pleasure he would derive from the perusal. We need hardly say that no bee-fancier will content himself with anything less than the original: he will there find the beauties of the poet far out-balancing the errors of the naturalist; and as even these may be useful to the learner—for there is no readier way of imparting truth than by the correction of error—we shall follow the subject in some degree under the heads which Virgil has adopted, first introducing our little friends in the more correct character which modern science has marked out for them.

The "masses" of every hive consist of two kinds of bees, the workers and the drones. The first are undeveloped females, the second are the males. Over these presides the mother of the hive, the queen-bee. The number of workers in a strong hive is above 15,000, and of drones about one to ten of these. This proportion, though seldom exact, is never very much exceeded or fallen short of. A single family, where swarming is prevented, will sometimes amount, according to Dr. Bevan, to 50,000 or 60,000. In their wild state, if we may credit the quantity of honey said to be found, they must sometimes greatly exceed this number.

“ Sweet is the hum of bees,” says Lord Byron ; and those who have listened to this music in its full luxury, stretched upon some sunny bed of heather, where the perfume of the crushed thyme struggled with the faint smell of the bracken, can scarcely have failed to watch the little busy musician,

“ with honey’d thigh,
That at her flowery work doth sing,”

too well to require a lengthened description of her ; how she flits from flower to flower with capricious fancy, not exhausting the sweets of any one spot, but, on the principle of “ live and let live,” taking something for herself, and yet leaving as much or more for the next comer, passing by the just-opening and the faded flowers, and deigning to notice not even one out of five that are full-blown, combining the philosophy of the Epicurean and the Eclectic ;— or still more like some fastidious noble, on the grand tour, with all the world before him, hurrying on in restless haste from place to place, skimming over the surface or tasting the sweets of society, carrying off some memento from every spot he has lit upon, and yet leaving plenty to be gleaned by the next traveller, dawdling in one place he knows not why, whisking by another which would have amply repaid his stay, and still pressing onwards as if in search of something, he knows not what—though he too often fails to carry home the same proportion of happiness as his compeer does of honey.

“ A bee among the flowers in spring,” says Paley, “ is one of the cheerfulest objects that can be looked

upon. Its life appears to be all enjoyment: *so busy and so pleased.*"

The Drone may be known by the noise he makes. Hence his name. He has been the butt of all who have ever written about bees, and is indeed a by-word all the world over. No one can fail to hit off his character. He is the "lazy yawning drone" of Shakspeare. The

"Immunisque sedens aliena ad pabula fucus"*

of Virgil. "The drone," says Butler, "is a gross, stingless bee, that spendeth his time in gluttony and idleness. For howsoever he brave it with his round velvet cap, his side gown, his full paunch, and his loud voice, yet is he but an idle companion, living by the sweat of others' brows. He worketh not at all either at home or abroad, and yet spendeth as much as two labourers: you shall never find his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noise, as though he would do some great act; but it is only for his pleasure, and to get him a stomach, and then returns he presently to his cheer." This is no bad portrait of the burly husband of the hive. He is a proper Sir John Falstaff, a gross fat animal, cowardly, and given to deep potations. He cannot fail to be recognised by his broad

* Virgil, who has confounded their battles with their swarming, seems also to have made a Drone-king. What else can this mean—

"Ille horridus alter
Desidiâ, latumque trahens inglorius alvum"?

body and blunt tail and head, and the "bagpipe i' the nose." He is never seen settling on flowers, except at the beginning of August, when he may sometimes be met upon a late-blown rose, or some double flower that the workers rarely frequent, in a melancholy, musing state, as if prescient of the miserable fate that so soon awaits him. The occasion for so large a proportion of

"These lazy fathers of the industrious hive"

is yet an unsolved riddle. One author fancied them the water-carriers of the commonwealth. Some have supposed that the drones sit, like hens, upon the eggs;* in which case the hair on their tails would seem to serve the same purpose as the feather-breeches which Catherine of Russia had made for her ministers when she caused them as a punishment to hatch eggs in a large nest in the antechamber. But this sitting is mere fancy, the earwig being the only insect, according to Kirby and Spence, that broods over its eggs. Dr. Bevan denies that they are useful, or at least necessary, in keeping up the heat of the hive in breeding-time, which is the commonly received reason for their great numbers. Huber thought so large a quantity were required, that when the queen takes her hymeneal flight she may be sure to meet with some in the upper regions of the air. Her embrace is said to be fatal.

* "By this time your bees sit."—*Evelyn's Calendar for March*.
"When it has deposited the eggs, it sits upon them, and cherishes them in the same manner as a bird."—*Arabic Dictionary quoted by*

• Cotton. "Progeniem nidosque fovant."—*Georg.* iv. 56.

Last in our description, but

“First of the throng, and foremost of the whole,
One stands confest the sovereign and the soul.”

This is the Queen-bee. Her power was acknowledged before her sex was known, for Greeks, Latins, and Arabs always style her “the king;”^{*} and it may be thought an argument in favour of monarchical government, that the “tyrant-quelling” Athenians, and republican Romans who almost banished the name with the blood of their kings, were forced to admit it to describe “the first magistrate” of this natural commonwealth. “The queen,” says our old author, “is a fair and stately bee, differing from the vulgar both in shape and colour.” And it is amusing that the most sober writers cannot speak of her without assigning her some of those stately attributes which we always connect with human sovereignty. Bevan remarks that “she is distinguishable from the rest of the society by a more measured movement;” her body is more taper than that of the working-bee; her wings shorter, for she has little occasion for flight; her legs—what would Queen Elizabeth, who would not hear even of royal *stockings*, think of our profaneness?—her legs unfurnished with grooves, for she gathers no pollen; her proboscis short, for the honey comes to her, not she to the honey; her sting short and curved—for sting she has, though she seldom uses it.

In addition to these, Huber and others have

^{*} So also Shakspeare: “They have a king,” &c.—*Henry V.*, Act I., s. 2.

thought that they discerned certain black bees in many hives, but it is now generally allowed that these, if they exist at all, are not a different species, but superannuated workers.

Having "caught our hare," got our stock of bees, the next question is, where shall we place them? and there is little to be added to Virgil's suggestions on this head.* The bee-house should face the south, with a turn perhaps to the east; be protected from the north and prevailing winds; not too far from the dwelling, lest they become shy of man, nor too near, lest they be interrupted by him. No paths should cross its entrance, no high trees or bushes intercept their homeward flight. Yet, if placed in the centre of a treeless lawn, they would be apt in swarming to fly away altogether, so that Virgil rightly recommends the palm or some evergreen tree to overhang the hive. Another of his injunctions, which no modern writer seems to notice, is to sprinkle some neighbouring branch, where you wish them to hang, with honey and sweet herbs bruised. Those who have been so often troubled by the inconvenient places on which swarms have settled might do well to try the recommendation of the old Mantuan bee-master. A quiet nook in low ground is better than

* Old Tusser, whose saws deserve to be republished in a cheap form by the Royal Agricultural Society, runs thus:—

"Set hive on a plank not too low on the ground,
Where herb with the flowers may compass it round;
And boards to defend it from north and north-east,
From showers and rubbish, from vermin and beast."

Tusser's Five Hundred Points of Good Husbandry, 1560.

an elevated situation: they have then their uphill flight when their bodies are unburdened, and an inclined plane to skim down when they come home loaded with their hard-earned treasure. Rogers, at whose

“cot beside the hill
A bee-hive's hum should soothe the ear,”

has supposed the bee to be guided back to its hive by the recollection of the sweets it passed in its outward flight—a beautiful instance of “the pleasures of Memory.”

“O'er thymy downs she bends her busy course,
And many a stream allures her to its source:
'Tis noon; 'tis night. That eye so finely wrought,
Beyond the search of sense, the soar of thought,
Now vainly asks the scenes she left behind;
Its orb so full, its vision so confined!
Who guides the patient pilgrim to her cell?
Who bids her soul with conscious triumph swell?
*With conscious truth retrace the mazy clue
Of varied scents that charm'd her as she flew?*
Hail, Memory, hail! thy universal reign
Guards the least link of Being's glorious chain.”

Whether this be the true solution or not, her return to her hive, so straight as it is, is very curious. We are convinced of the use of bee-houses as a protection for the hives, though they are disapproved of by many modern writers. They serve to moderate the temperature in winter and summer, and screen the neighbourhood of the hive in rough weather. Dr. Bevan says—

“Excepting in peculiarly sheltered nooks, an apiary would not be well situated near a great river, nor in the neighbourhood of the sea, as in windy weather the bees would be in

danger of drowning from being blown into the water. . . . Yet it should not be far from a rivulet or spring; such streams as glide gently over pebbles are the most desirable, as these afford a variety of resting-places for the bees to alight upon."

This is almost a translation of Virgil's "In medium, seu stabit iners," &c. Water is most important to them, particularly in the early part of the season. Let shallow troughs, therefore, never be neglected to be set near the hives, if no natural stream is at hand.

It seems that bees, like men, require a certain quantity of saline matter for their health. In the Isle of Wight the people have a notion that every bee goes down to sea to drink twice a-day; and they are certainly seen to drink at the farm-yard pool—

" the gilded puddle
That beasts would cough at"—

when clearer water is near. Following the example of our modern graziers, a small lump of rock-salt might be a useful medicine-chest for our winged stock. Foul smells and loud noises have always been thought annoying to bees, and hence it is deemed advisable never to place the hives in the neighbourhood of forges, pigsties, and the like. Virgil even fancied that they disliked the neighbourhood of an echo: but upon this Gilbert White, of Selborne, remarks:—

" This wild and fanciful assertion will hardly be admitted by the philosophers of these days, especially as they all now seem agreed that insects are not furnished with any

organs of hearing at all. But if it should be urged that, though they cannot hear, yet perhaps they may feel the repercussion of sounds, I grant it is possible they may. Yet that these impressions are distasteful or hurtful I deny, because bees, in good summers, thrive well in my outlet, where the echoes are very strong; for this village is another Anathoth, a place of responses or echoes. Besides, it does not appear from experiment that bees are in any way capable of being affected by sounds; for I have often tried my own with a large speaking-trumpet held close to their hives, and with such an exertion of voice as would have hailed a ship at the distance of a mile, and still these insects pursued their various employments undisturbed, and without showing the least sensibility or resentment." *

Next to the situation of the hive is the consideration of the bees' pasturage. When there is plenty of the white Dutch clover, sometimes called honey-suckle, it is sure to be a good honey year. The red clover is too deep for the proboscis of the common bee, and is therefore not so useful to them as is generally thought. Many lists have been made of bee-flowers, and of such as should be planted round the apiary. Mignonette, and borage, and rosemary, and bugloss, and lavender, the crocus for the early spring, and the ivy flowers for the late autumn, might help to furnish a very pretty bee-garden; and the lime

* Of Gilbert White—who by the way was not "parson of the parish," but continued a Fellow of Oriel till his death—all that could be heard at the scene of his researches by a late diligent inquirer was, that "he was a still, quiet body, and that there was not a bit of harm in him." And such is the fame of a man the power of whose writings has immortalized an obscure village and a tortoise—for who has not heard of "Timothy"?—as long as the English language lives!

and liquid-amber, the horse-chestnut, and the sallow would be the best trees to plant around. Dr. Bevan makes a very good suggestion, that lemon-thyme should be used as an edging for garden-walks and flower-beds, instead of box, thrift, or daisies. That any material good, however, can be done to a large colony by the few plants that, under the most favourable circumstances, can be sown around a bee-house is of course out of the question. The bee is too much of a roamer to take pleasure in trim gardens. It is the wild tracts of heath and furze, the broad acres of bean-fields and buck-wheat, the lime avenues, the hedge-row flowers, and the clover meadows, that furnish his haunts and fill his cell. Still it may be useful for the young and weak bees to have food as near as possible to their home, and to those who wish to watch their habits a plot of bee-flowers is indispensable; and we know not the bee that could refuse the following beautiful invitation of Professor Smythe:—

“Thou cheerful Bee! come, freely come,
And travel round my woodbine bower!
Delight me with thy wandering hum,
And rouse me from my musing hour:
Oh! try no more those tedious fields,
Come, taste the sweets my garden yields:
The treasures of each blooming mine,
The bud, the blossom,—all are thine.
And, careless of this noon-tide heat,
I'll follow as thy ramble guides;
To watch thee pause and chafe thy feet,
And sweep them o'er thy downy sides:
Then in a flower's bell nestling lie,
And all thy envied ardour ply!
Then o'er the stem, though fair it grow,
With touch rejecting, glance, and go.

O Nature kind ! O labourer wise !
That roam'st along the summer's ray,
Glean'st every bliss thy life supplies,
And meet'st prepared thy wintry day !
Go, envied, go—with crowded gates
The hive thy rich return awaits ;
Bear home thy store, in triumph gay,
And shame each idler of the day."

Pliny bids us plant thyme and apiaster, violets, roses, and lilies. Columella, who, contrary to all other authority, says that limes are hurtful, advises cytissus, rosemary, and the evergreen pine. That the prevalent flower of a district will flavour the honey is certain. The delicious honey of the Isle of Bourbon will taste for years of the orange-blossoms, from which, we believe, it is gathered, and on opening a bottle of it the room will be filled with the perfume. The same is the case with the honey of Malta. Corsican honey is said to be flavoured by the box-tree, and we have heard of honey being rendered useless which was gathered in the neighbourhood of onion fields. No one who has kept bees in the neighbourhood of a wild common can fail to have remarked its superior flavour and *bouquet*. The wild rosemary that abounds in the neighbourhood of Narbonne gives the high flavour for which the honey of that district is so renowned. But the plant the most celebrated for this quality is the classic and far-famed thyme of Mount Hymettus, the *Satureia capitata* of botanists. This, we are assured by Pliny, was transplanted from the neighbourhood of Athens into the gardens of the Roman bee-keepers, but they failed to import with it the

flavour of the Hymettic honey ; for the exiled plant, which, according to this author, never flourished but in the neighbourhood of the ocean, languished for the barren rocks of Attica and the native breezes of its "own blue sea." And the honey of the Hymettus has not departed with the other glories of old Greece, though its flavour and aroma are said to be surpassed by that of neighbouring localities once famous from other causes. While the silver-mines of Laurium are closed, and no workman's steel rings in the marble-quarries of the Pentelicus, the hum of five thousand bee-hives is still heard among the thyme, the cistus, and the lavender which yet clothe these hills. "The Cecropian bees," says C. Wordsworth, "have survived all the revolutions which have changed the features and uprooted the population of Attica:" though the defile of Thermopylæ has become a swampy plain, and the bed of the Cephissus is laid dry, this one feature of the country has remained unaltered :—

" And still his honey'd store Hymettus yields,
There the blithe bee his fragrant fortress builds,
The free-born wanderer of thy mountain-air."

The honey here collected used to be reserved for the especial eating of the archbishop of the district, and few travellers could even get a taste of it. Such was the case a few years ago : we presume the purchase of the Hymettus by a countryman of ours, Mr. Bracebridge, who has also built him a villa there, must have tended to abolish the episcopal monopoly.

It has been often discussed whether a country can be overstocked with bees ; we believe this is quite as certain as that it may be over-peopled and over-manufactured. But that this is not yet the case with regard to Britain, as far at least as bees are concerned, we feel equally sure. Of course it is impossible to ascertain what number of acres is sufficient for the support of a single hive, so much depending on the season and the nature of the herbage ; but, nevertheless, in Bavaria only a certain number of hives is allowed to be kept, and these must be brought to an establishment under the charge of a skilful apiarian, each station being four miles apart, and containing 150 hives. This is centralization and red-tapery with a vengeance ! A story is told that in a village in Germany where the number of hives kept was regulated by law, a bad season had nevertheless proved that the place was overstocked from the great weakness of all the stalls in the neighbourhood. There was but one exception. This was the hive of an old man, who was generally set down as being no wiser than his neighbours, and this perhaps all the more because he was very observant of the habits of his little friends, as well as careful in harvesting as much honey as he could. But how came his hive to prosper when all the rest were falling off ? His cottage was no nearer the pasture ; and his garden, though he grew a few bee-flowers, was not larger than the rest. He certainly must have bewitched his neighbours' hives, or made "no canny" bargain for his own. Many were the

whisperings and great the suspicions that no good would come of the gaffer's honey thus mysteriously obtained. The old man bore all these surmises patiently ; the honey-harvest came round, and when he had stored away just double what any of the rest had saved, he called his friends and neighbours together, took them into his garden and said—"If you had been more charitable in your opinions, I would have told you my secret before—

This is the only witchcraft I have used :"—

and he pointed to the inclination of his hives—one degree more to the east than was generally adopted. The conjuration was soon cleared up ; the sun came upon his hives an hour or two sooner by this movement, and his bees were up and stirring, and had secured a large share of the morning's honey, before his neighbours' bees had roused themselves for the day. Mr. Cotton, who gives the outline of the story which we have ventured to fill up, quotes the proverb that "early birds pick up most worms," and draws the practical moral, in which we heartily concur, that your bedroom-window should always, if possible, face the east.

In an arable country, with little waste land and good farming, very few stocks can be supported ; and this has led some enthusiastic bee-masters to regret the advancement of agriculture, and the consequent decrease of wild flowers—or weeds, according to the eye that views them—and the enclosure

of wastes and commons.* Even a very short distance will make a great difference in the amount of honey collected. We know of an instance where a bee-keeper at Carshalton in Surrey, suspecting, from the fighting of his bees and other signs, that there was not pasturage enough in the immediate neighbourhood, conveyed away one of his lightest and most worthless hives, and hid it in the Woodmansterne furzes, a distance of about a mile and a half. Fortunately it lay there undiscovered, and on re-

* We can hardly ask, much less expect, that hedge-side swards should be made broader, and corn-fields be left unweeded, and the ploughshare be stayed, for the sake of the bee; but we do boldly enter our protest against the enclosure and planting of her best pasturage—our wild heath-grounds. And not for her sake only, but lest the taste, health, or pleasure of the proprietor himself should suffer any detriment. More strenuous advocates for planting than ourselves exist not. The dictum of the great Master of the North, "Be aye sticking in a tree, Jock, it will be growing while ye are sleeping"—put forth in the "Heart of Mid Lothian," and repeated by him in our Journal,—has been the parent of many a fair plantation, and may it produce many more! But there are rush-bearing commons, and ragged banks of gravel, and untractable clay-lands, and hassocky nooks, enough and to spare, the fit subjects for new plantations, without encroaching upon our "thymy downs" and heather hills. The land of the mountain and the flood may indeed afford from her very riches in this respect to spare some of her characteristic acres of "bonny blooming heather;" and there are parts of the northern and midland counties of England that can equally endure the sacrifice;—but spare—oh, spare—to spread the damp sickly atmosphere of a crowded plantation over the few free, bracing, breezy heath-grounds which the south can boast of.—Such a little range of hills we know in Surrey, lying between Addington and Coombe, now sadly encroached upon by belts and palings since our boyhood days. Only let a man once know what a summer's evening stroll over such a hill, as it "sleeps in moonlight luxury," is—let him but once have tasted the dry, fresh, and balmy air of such a pebbly bank of heath, without a tree, save perhaps a few pines, within a mile around, when all the valley and the woodland below are wet with dew and dank with foliage,—and then say whether such an expanse can be well exchanged for any conceivable advantage of thicket or grove.

moving it home he found that it had become one of his heaviest hives. We mention this as a case coming under our own knowledge, because a late writer, who has shown rather a waspish disposition in his attacks on Mr. Cotton's system, seems to question not only the advantage, but the practicability of the transportation of hives altogether. But the fact is, that in the north of England and in Scotland, where there are large tracts of heather-land apart from any habitation, nothing is more common than for the bee-masters of the towns and villages to submit their hives during the honey season to the care of the shepherd of the district. "About six miles from Edinburgh," says Dr. Bevan, "at the foot of one of the Pentland Hills, stands Logan House, supposed to be the residence of the Sir William Worthy celebrated by Allan Ramsay in his 'Gentle Shepherd.' The house is at present occupied by a shepherd, who about the beginning of August receives about a hundred bee-hives from his neighbours resident beyond the hills, that the bees may gather honey from the luxuriant blossoms of the mountain heather." Mr. Cotton saw a man in Germany who had 200 stocks, which he managed to keep all rich by changing their places as soon as the honey-season varied. "Sometimes he sends them to the moors, sometimes to the meadows, sometimes to the forest, and sometimes to the hills." He also speaks of it being no uncommon sight in Switzerland to see a man journeying with a bee-hive at his back.

There is something very interesting and Arcadian in this leading of the bees out to pasture, and it deserves more attention than it has yet met with in this country. The transportation we have hitherto spoken of is only to a short distance and on a small scale ; but in Germany travelling caravans of these little wild-beasts may be met with, which sometimes make a journey of thirty miles, taking four days to perform it. There is nothing new in this transmigration, for Columella tells us that the inhabitants of Achaia sent their hives into Attica to benefit by the later-blowing flowers. The most pleasing picture, however, of all is that of the floating bee-houses of the Nile, mentioned by old and modern writers, and thus described by Dr. Bevan :—

“ In Lower Egypt, where the flower-harvest is not so early by several weeks as in the upper districts of that country, this practice of transportation is carried on to a considerable extent. About the end of October the hives, after being collected together from the different villages, and conveyed up the Nile, marked and numbered by the individuals to whom they belong, are heaped pyramidally upon the boats prepared to receive them, which, floating gradually down the river, and stopping at certain stages of their passage, remain there a longer or a shorter time, according to the produce which is afforded by the surrounding country. After travelling three months in this manner, the bees, having culled the perfumes of the orange-flowers of the Said, the essence of roses of the Faioum, the treasures of the Arabian jessamine, and a variety of flowers, are brought back about the beginning of February to the places from which they have been carried. The productiveness of the flowers at each respective stage is ascertained by

the gradual descent of the boats in the water, and which is probably noted by a scale of measurement. This industry procures for the Egyptians delicious honey and abundance of bees'-wax. The proprietors, in return, pay the boatmen a recompense proportioned to the number of hives which have thus been carried about from one extremity of Egypt to the other."—p. 233.

Such a convoy of 4000 hives was seen by Niebuhr on the Nile between Cairo and Damietta. An equally pleasing account is given by Mr. Cotton of the practice in France :—

"In France they put their hives in a boat, some hundreds together, which floats down the stream by night, and stops by day. The bees go out in the morning, return in the evening; and when they are all back and quiet, on the boat floats. I have heard they come home to the ringing of a bell, but I believe they would come home just the same, whether the bell rings or no."—*Cotton*, p. 89.

"I should like," he continues, "to see this tried on the Thames, for no river has more bee-food in spring; meadows, clover, beans, and lime-trees in different places and times, for summer."

Happy bees, whose masters are good enough to give them so delightful a treat! We can fancy no more pleasing sight, except it be the omnibuses full of school-children that one sometimes sees on a fine summer's day making for the hills of Hampstead or Norwood.

Connected with their transmigration is the question of the extent of their flight. We believe that two miles may be considered as the radius of the

circle of their ordinary range, though circumstances will occasionally drive them at least a mile more. We have read somewhere of a man who kept bees at the top of his house in Holborn, and wishing to find out where they pastured, he sprinkled them all with a red powder as they came out of the hive in the morning. Away he hied to Hampstead, thinking it the best bee-pasture at hand, and what was his delight at beholding among the multitudes of busy bees that he found there some of his own little fellows which he had "incarnadined" in the morning! The apiary of Bonner, a great bee-observer, was situated in a garret in the centre of Glasgow; and that of Mr. Payne, the author of the "Bee-Keeper's Guide"—a very useful and practical book, because short and simple—is in the middle of a large town.

Judging from the sweep that bees take by the side of a railroad train in motion, we should set down their pace about thirty miles an hour. This would give them four minutes to reach the extremity of their common range. A bee makes several journeys from and to the hive in a day; and Huish remarked that a honey-gathering bee was absent about thirty-five minutes, and a pollen-collector about half that time. The pollen or farina of flowers is doubtless much more plentiful and accessible than the honey. The same writer observed bees on the Isle of May, at the entrance of the Frith of Forth, though there was no hive kept on the island, which is distant four miles from the mainland. This is an amazing stretch of flight, considering the element over which they

have to fly, the risk of finding food when they land, and the load they have to return with, if successful. Were they not wild bees of the island?

In speaking of the food of bees, we must not omit the Honey-dew. This shining, gummy substance must have been often noticed in hot weather on the leaves of the lime and oak by the most incurious observer. The ancients considered it either as a deposition of the atmosphere or an exudation from the leaves of trees; for to these opinions the "*aërii mellis cœlestia dona*," and "*quercus sudabunt roscida mella*," of Virgil seem to refer. Gilbert White held the singular notion that it was the effluvia of flowers evaporated and drawn into the atmosphere by the heat of the weather, and then falling down again in the night with the dews that entangle them. Its origin is certainly one of those vexed questions, which, like that of "*fairy rings*," yet require further light for a satisfactory explanation. At present it is impossible to reconcile the discrepancy in the observations of naturalists, some actually asserting that they have seen showers of it falling. To adjust the most common opinions, it is now generally admitted that there are two sources, if not two kinds; one being a secretion from the leaves of certain plants, the other a secretion from the body of an insect. Those little green insects, the aphides, which we commonly call blight, are almost always observed to accompany any large deposition of Honey-dew, and are said to have the power of jerking it to a great distance. The subject at the present moment is

attracting great attention among our naturalists, and it is probable that the clash of opinions will bring out something very near the truth. That the aphides do secrete a saccharine fluid has been long known, and the bees are not their only fellow-insects who are fond of it. Their presence produces a land of milk and honey to the ants, who follow them wherever they appear, and actually herd them like cows and milk them ! *

* What follows is from the delightful 'Introduction to Entomology,' by Kirby and Spence. "The loves of the ants and the aphides have been long celebrated; and that there is a connection between them you may at any time, in the proper season, convince yourself; for you will always find the former very busy on those trees and plants on which the latter abound; and, if you examine more closely, you will discover that their object in thus attending upon them is to obtain the saccharine fluid—which may well be denominated their milk—that they secrete. . . . This, however, is the least of their talents, for they absolutely possess the art of making them yield it at their pleasure—or, in other words, of milking them. On this occasion their antennæ are their fingers; with these they pat the abdomen of the aphis on each side alternately, moving them very briskly: a little drop of fluid immediately appears, which the ant takes in its mouth. When it has milked one, it proceeds to another, and so on, till, being satiated, it returns to the nest. But you are not arrived at the most singular part of this history—that the ants make a *property* of these cows, for the possession of which they contend with great earnestness, and use every means to keep them to themselves. Sometimes they seem to claim a right to the aphides that inhabit the branches of a tree or the stalks of a plant; and if stranger-ants attempt to share their treasure with them, they endeavour to drive them away, and may be seen running about in a great bustle, and exhibiting every symptom of inquietude and anger. Sometimes, to rescue them from their rivals, they take their aphides in their mouth; they generally keep guard round them, and when the branch is conveniently situated they have recourse to an expedient still more effectual to keep off interlopers—they enclose it in a tube of earth or other materials, and thus confine them in a kind of paddock near their nest, and often communicating with it." How much of this is fanciful we must leave our readers to determine by their own observations; but let no man think he knows how to enjoy the country who has not studied the volumes of Kirby and Spence.

Much has been written upon the poisonous effects of certain plants, sometimes upon the honey, sometimes upon the bees themselves. Every schoolboy must remember the account given by Xenophon of the effect produced upon the Ten Thousand by the honey in the neighbourhood of Trebizond.* The soldiers suffered in proportion to the quantity they had eaten: some seemed drunken, some mad, and some all but died. (*Anab.* iv. 8.) This quality in the honey has been referred by Pliny and others to the poisonous nature of the rhododendron, which abounds in those parts; but from inquiries which we have made at Dropmore, and other spots abounding with this shrub, we cannot learn that any difference is perceived in the honey of those districts, or indeed that the common bee is ever seen to settle on its flowers. If the *Kalmia latifolia* be a native of Pontus, the danger is more likely to have arisen from that source, the honey derived from which has been known to prove fatal in several instances in America.

One remarkable circumstance about bees is the number of commodities of which they are either the collectors or confectioners. Besides honey and wax, there are two other distinct substances which they gather, bee-bread and propolis.

Before we knew better, we thought, probably with most of our readers, when we saw a bee "tolling from every flower the virtuous sweets," with his legs

* The same effect is also mentioned by Diodorus, Dioscorides, Pliny, Strabo, Ælian, and Procopius.

full of the dust of the stamens, that he was hurrying home with the wax to build his cell, or at least with the material wherewith to make that wax. We thought of Titania and her fairies, who "for night tapers crop their waxen thighs," and many other pretty things that poets have said and sung about them; or if in a more prosaic mood, we at least conceived that, if not furnishing fairy candles, they were laying the foundation for what Sir F. Trench calls "the gentleman's light." No such thing. Their hollow legs were filled with the pollen or farina of flowers, which has nothing whatever to do with the composition of wax, but constitutes the ambrosia of the hive—as honey does its nectar—their bee-bread, or rather, we should say, bee-pap, for it is entirely reserved for the use of their little ones. Old Butler had so long ago remarked, that "when they gather abundance of this stuff (pollen) they have never the more wax: when they make most wax, they gather none of this." In fact they store it up as food for the embryo bees, collecting from thirty to sixty pounds of it in a season; and in this matter alone they seem to be "unthrift of their sweets," and to want that shrewdness which never else fails them, for they often, like certain over-careful housewives with their preserves, store away more than they can use, which, in its decomposition, becomes to them a sore trouble and annoyance. They are said always to keep to one kind of flower in collecting it, and the light red colour of it will often detect them as the riflers of the mignonette-bed: but we have seen

them late in the season with layers of different colours, and sometimes their whole body sprinkled with it, for they will at times roll and revel in a flower like a donkey on a dusty road.

Whence, then, comes the wax? It is elaborated by the bee itself *from the honey* by a chemistry beyond the ken of either Faraday or Liebig, being exuded in small scales from between the armour-like folds of their body. This was noticed almost contemporaneously by John Hunter and Huber, and confirmed by the most conclusive experiments of the latter. A legal friend, to whom we are indebted for much of our bee-law, thus records his own observation:—"I have often watched these fellows, hanging apparently torpid, after, as I think, a plentiful meal. Suddenly they make their whole persons vibrate like the prong of a tuning-fork: you cannot see their outline. This is a signal for one of the wax-collectors to run up quickly and fumble the lately-agitated gentleman with the instruments with which they hold the wax; and after collecting the scales, they hasten to mould them into the comb." What would our *bon-vivans* give if they could thus, at their pleasure, shake off the effects of a Goldsmiths'-Hall dinner in the shape of a temporary fit of gout and chalk-stones?

Many in their schoolboy days, though we aver ourselves to be guiltless, having too often followed Titania's advice, and

"Honey-bags stolen from the humble-bee,"

need not to have much told them of how they carry

about them their liquid nectar. "Kill me," says Bottom to Cobweb, "a red-hipped humble-bee on the top of a thistle, and, good Monsieur, bring me the honey-bag." They never swarm without a good stock of honey in their inside, to enable them to make a fair start in their new housekeeping. The honey which they sip from the nectaries of the flowers probably undergoes some change, though it is but a slight one, before it is deposited in the cells. It was formerly considered a balm for all ills, though now deemed anything but wholesome when eaten in large quantities. The following are some of its virtues, besides others which we omit, given by Butler. It is only wonderful that our grandfathers, living in the midst of such an universal medicine, should have ever died.

"Honey cutteth and casteth up flegmatic matter, and therefore sharpeneth the stomachs of them which by reason thereof have little appetite: it purgeth those things which hurt the clearness of the eyes; it nourisheth very much; it breedeth good blood; it stirreth up and preserveth natural heat, and prolongeth old age: it keepeth all things uncorrupt which are put into it; and therefore physicians do temper therewith such medicines as they mean to keep long; yea the bodys of the dead, being embalmed with honey, have been thereby preserved from putrefaction," &c. &c.

The fourth product of the bee is propolis, or which we shall rather call bee-gum. It is at once the glue and varnish of their carpentry. With this resinous substance * (quite distinct from wax) they fix their

* As a further proof of the minute attention with which the

combs to the sides and roof, fasten the hives to the stand, stop up crevices, varnish the cell-work of their combs, and embalm any dead or noxious animal that they catch within their hive :

“ Caulk every chink where rushing winds may roar,
And seal their circling ramparts to the floor.”—*Evans*.

Bees may often be seen settling on the bark of the fir, the gummy leaf of the hollyhock, or on the—we dare not use Horace Walpole's expression—varnished bud of the horse-chestnut. They are then collecting neither bread nor honey, but gum for the purposes above mentioned. Huish mentions a case of their coating over a dead mouse within the hive with this gum, thus rendering their home proof against any impure effluvium; but they were much more cunning with a snail, which they sealed down, *only round the edge of the shell*, thus fixing him as a standing joke, a laughing-stock, a living mummy like Marmion's Constance, “alive within the tomb” (for a snail, though excluded from air, would not die), so that he who had heretofore carried his own house was now made his own monument.

As one of the indirect products of the bee we must not forget Mead, the Metheglin * of Shakspeare and Dryden. It was the drink of the ancient Britons and Norsemen, and filled the skull-cups in the Feast

ancients studied bees, the Greeks had three names at least for the different qualities of this substance—*πρόπολις*, *κόμμιωσις*, and *πισσόκηρος*.

* The derivation of this word, which one would rather expect to be Celtic or Scandinavian, is very plausible, if not true, from the Greek—*μέθυ αἰγλήν*.

of Shells in the Hall of Odin. In such esteem was it held, that one of the old Welsh laws ran thus: "There are three things in court which must be communicated to the king before they are made known to any other person:—1st. Every sentence of the Judge. 2nd. Every new song. 3rd. Every cask of Mead." Queen Bess was so fond of it, that she had some made for her own especial drinking every year; and Butler, who draws a distinction between Mead and Metheglin, making Hydromel the generic term, gives the following receipt for the latter and better drink, the same used by "our renowned Queen Elizabeth of happy memory."

"First gather a bushel of sweet-briar leaves and a bushel of tyme, half a bushel of rosemary, and a pek of bay-leaves. Seethe all these (being well washed) in a furnace of fair water; let them boil the space of an hour or better, and then pour out all the water and herbs into a vat, and let it stand till it be but milk-warm: then strain the water from the herbs, and take to every six gallons of water one gallon of the finest honey and put it into the boorne and labour it together half an hour; then let it stand two days, stirring it well twice or thrice each day. Then take the liquor and soil it anew, and when it doth seethe, skim it as long as there remaineth any dross. When it is clear put it into the vat as before, and there let it be cooled. You must then have in a reddiness a kive of new ale or beer, which, as soon as you have emptied, suddenly whelm it upside down and set it up again, and presently put in the Methæglen and let it stand three days a working; and then tun it up in barrels, tying at every tap-hoal (by a pack-thread) a little bag of beaten cloves and mace to the value of an ounce. It must stand half a year before it be drunk."

The Romans softened their wine sometimes with honey (*Georg.* iv., 102), sometimes with mead—*mulso*. (*Hor.*; 1, 2, 4, 24.)

“The good bee,” says More, “as other good people, hath many bad enemies;” and though opinions and systems of management have changed, the bees’ enemies have remained much the same from the time of Aristotle. Beetles, moths, hornets, wasps, spiders, snails, ants, mice, birds, lizards, and toads, will all seek the hives, either for the warmth they find there, or oftener for the bees, and, more frequently still, for the honey. The wax-moth is a sad plague, and when once a hive is infested with it, nothing effectual is to be done but by removing the bees altogether into a new domicile. Huish tells of an old lady, who, thinking to catch the moths, illuminated her garden and bee-house at night with flambeaux—the only result of which was that, instead of trapping the marauders, she burnt her own bees, who came out in great confusion to see what was the matter. The great death’s-head moth (*Sphinx atropos*), occasionally found in considerable numbers in our potato-fields—the cause of so much alarm wherever its awful note and badge are heard and seen—was noticed first by Huber as a terrible enemy to bees. It was against the ravages of this mealy monster that the bees were supposed to erect those fortifications, the description and actual drawing of which by Huber threw at one time so much doubt on his other statements. He speaks of bastions, intersecting arcades, and gateways masked by

walls in front, so that their constructors "pass from the part of simple soldiers to that of engineers." Few subsequent observers* have, we believe, detected the counterscarps of these miniature Vaubans, but, as it is certain that they will contract their entrance against the cold of winter, it seems little incredible that they should put in practice the same expedient when other necessities call for it; and to style such conglomerations of wax and propolis bastions, and battlements, and glacis, is no more unpardonable stretch of the imagination than to speak of their queens and sentinels.

An old toad may be sometimes seen sitting under a hive, and waiting to seize on such as, coming home loaded with their spoil, accidentally fall to the ground. We can hardly fancy this odious reptile in a more provoking position. Tomtits, which are called bee-biters in Hampshire, are said to tap at the hive, and then snap up the testy inmates who come out to see what it is all about: if birds chuckle as well as chirp, we can fancy the delight of this mischievous little ne'er-do-good at the success of his *lark*. The swallow is an enemy of old standing, as

* The ever-amusing Mr. Jesse says, "I have now in my possession a regular fortification made of propolis, which my bees placed at the entrance of their hive, to enable them the better to protect themselves from the wasps."—*Gleanings*, vol. i. p. 24. It may have been with some such idea that the Greeks gave the name "propolis,"—"outwork," to the principal material with which they construct these barricades; and Virgil has "munire favos." Did Byron allude to this in his fragrant fortress?"

we may learn from the verses of Euenus, prettily translated by Merivale.*

“Attic maiden, honey-fed,
Chirping warbler, bear'st away
Thou the busy buzzing bee
To thy callow brood a prey?
Warbler thou, a warbler seize!
Winged, one with lovely wings!
Guest thyself, by summer brought,
Yellow guest whom summer brings!”
Wilt not quickly let it drop?
'Tis not fair, indeed 'tis wrong,
That the ceaseless warbler should
Die by mouth of ceaseless tongue.”

Many are the fables and stories of the bear and the bees, and the love he has for honey. One, not so well known, we extract from Butler. The conteur is one Demetrius, a Muscovite ambassador sent to Rome.

“A neighbour of mine,” saith he, “searching in the woods for honey, slipped down into a great hollow tree; and there sunk into a lake of honey up to the breast: where—when he had stuck fast two days, calling and crying out in vain for help (because nobody in the mean while came nigh that solitary place)—at length when he was out of all hope of

* So stated by Cotton; but on reference to the elegant volume of ‘Bland’s Collections from the Greek Anthology,’ the last and best edition of 1833, we find a different version assigned to Mr. Merivale. Moreover, the prey of the swallow is there made the cicada, and not the bee. We infinitely prefer the translation given in ‘My Bee-book,’ which yet falls so short of the epigrammatic turn of the original, that we can only do justice to Euenus by adding the Greek:—

“Ατθι κόρα μελίθρεπτε, λάλον λάλος ἀρπάξασα,
Νήλεος ἀπτήσιν δαῖτα φέρεις τέκεσιν,
Τόνδε λάλον λαλδέσσα, τὸν εὐπτερον ἂ πτερόεσσα
Τὸν ξέγον ἅ ξείνα, τὸν θερινὸν θερινὰ
Ὅχι τάχος ῥίψεις; οὐ γὰρ θέμις οὐδὲ δίκαιον
Ὅλλυσθ' ὕμνοπόλους ὕμνοπόλοις στόμασιν.

life, he was strangely delivered by the means of a great bear, which, coming thither about the same business that he did, and smelling the honey (stirred with his striving), clambered up to the top of the tree, and thence began to let himself down backward into it. The man bethinking himself, and knowing that the worst was but death (which in that place he was sure off), beclipt the bear fast with both his hands about the loins, and withal made an outcry as loud as he could. The bear, being thus suddenly affrighted (what with the handling and what with the noise), made up again with all speed possible: the man held, and the bear pulled until with main force he had drawn *Dun out of the mire*; and then, being let go, away he trots, more afeard than hurt, leaving the smeared swain in a joyful fear.”—*Butler*, p. 115.

The bear, from his love of honey, acts as a pointer to the bee-hunters of the North, who note the hollow trees which he frequents and rubs against, knowing thereby that they contain honey. “The bears,” said a bee-hunter to Washington Irving, “is the knowingest varmint for finding out a bee-tree in the world. They’ll gnaw for days together at the trunk till they make a hole big enough to get in their paws, and then they’ll haul out the honey, bees and all.”

Wasps are sad depredators upon bees, and require to be guarded against. The large mother-wasp, which is often observed quite early in the spring, and which common people call a hornet, should always be destroyed, as it is the parent of a whole swarm. In many places the gardeners will give sixpence a-piece for their destruction, and bee-masters should not refuse at least an equal amount of head-money.

These brazen-mailed invaders take good care never to attack any but a weak hive: here they very soon make themselves at home, and walk in and out in the most cool, amusing manner possible. As an instance of the extent to which their intrusion may be carried, there was sent to the Entomological Society, in July last, a very complete wasps'-nest, found in the interior of a bee-hive, the lawful inhabitants of which had been put to flight by the burglars.

“But not any one of these” (we quote from the old fellow of Magdalen, from whom so many have borrowed without acknowledgment), “nor all the rest together, do half so much harm to the Bees as the Bees.” And here again they too truly represent human nature. As riches increase, they set their hearts the more upon them. The stronger the stock is, the more likely are they to turn invaders, and of course they fix upon the weakest and most resistless of their brethren as the subjects of their attack. Then comes the tug of war; and a terrible struggle it is. Here is an extract from Mr. Cotton’s notebook:—

“I was sitting quietly in the even of a fine day, when my sister came puffing into the room, ‘Oh! Willy, make haste and come into the garden, the bees are swarming!’ ‘Nonsense,’ I said; ‘they cannot be swarming; it is August, and four o’clock in the even.’ Nevertheless I was bound, as a loving brother, to see what grounds my wise sister had for her assertion. I got up, went to the window, and, although I was at least 400 yards from my bees, the air seemed full of them. I rushed out to the garden; the first

sight of my hive made me think my sister was right. On looking more narrowly, I perceived that the bees were hurrying in, instead of swarming out; and on peeping about, I saw lying on the ground the

‘defuncta corpora vitâ
Magnanimûm heroum.’

They all had died fighting, as the play-book says, *pro hares et foxes*. My thoughts then turned to my other stock, which was about a quarter of a mile off. I ran to it as fast as I could: hardly had I arrived there, when an advanced body of the robber regiment followed me; they soon thickened; I tried every means I could think of to disperse them, but in vain: I threw dust into the air among the thickest; and read them the passage in Virgil, which makes the throwing of the dust in the air equivalent to the Bees' Riot Act:—

‘Hi motus animorum atque hæc certamina tanta
Pulveris exigui jactu compressa quiescent.’”—p. 319.

But all in vain. We know how often this same experiment has failed, though nothing can be more true than the rest of Virgil's description of the Battle of the Bees; but dust is certainly efficacious in causing them speedily to settle when they are swarming, whether it is that the dust annoys them, or that they mistake it for hail or rain.

There is yet one greater enemy than all, and that is Man. And this leads us to consider the different systems of management and harvesting which he has adopted; and some consolation it is that, various as may be the plans proposed, there is only one exception, among the many bee-books we have lately read, to the heartily expressed wish that the murderous system of stifling the bees may be wholly condemned

and abolished. Indeed, if Mr. Cotton's statement be correct, England shares with the valley of Chamouni the exclusive infamy of destroying the servants whose toil has been so serviceable. Cobbett says it is whimsical to save the bees, if you take the honey; but, on the other hand, to sacrifice them for the sake of it, is killing the goose for her golden eggs. A middle line is the safest; take a part. First, be sure that you leave enough to carry a stock fairly through the winter—say 30 lbs., hive and all—and the surplus is rightly your own, for the hives and the flowers you have found them, and the trouble and time you have bestowed. To devise such a method has engaged the attention of English bee-masters for many generations back; and to eke out the hive by a temporary chamber, which may be removed at pleasure, has been the plan most commonly proposed. Dr. Bevan (pp. 115-120) gives a detailed account of the different schemes, to which we refer our readers curious in such matters. There can be but three ways of adding to a hive—first, at the top, by extra boxes, small hives, caps, or bell-glasses, which may be called generally the storifying system—(we use the bee-man's vocabulary as we find it); secondly, at the side, by box, &c., called the collateral system; and thirdly, by inserting additional room at the bottom, called nadiring. To enter into all the advantages and disadvantages of these plans would be to write a volume; we must therefore content ourselves with Dr. Bevan's general rule, which we think experience fully bears out, that old stocks

should be *supered* and swarms be *nadired*. Side-boxes are the leading feature of Mr. Nutt's plan, about which so much has been written and lectured—but that there is nothing new in this, the title of a pamphlet published in 1756 by the Rev. Stephen White, '*Collateral Bee-boxes*,' will sufficiently show. The object of Mr. Nutt's system is to prevent swarming, which he seems to consider an *unnatural* process, and forced upon the bees by the narrowness and heat of the hive, caused by an overgrown population. To this we altogether demur: the unnatural part of the matter is that which, by inducing an artificial temperature, prevents the old Queen from indulging her nomadic propensities, and, like the Gothic sovereigns of old, heading the emigrating body of her people. Moreover, with all his contrivances Mr. Nutt, or at least his followers, cannot wholly prevent swarming—the old people still contrive to make their home "too hot" for the young ones. But great praise is due to him for the attention which he has called to the ventilation of the hive. Whatever be the system pursued, this is a point that should never be neglected, and henceforth a thermometer, much as the idea was at first ridiculed, must be considered an indispensable accompaniment to a bee-house. To preserve a proper temperature within, the bees themselves do all they can; and it is quite refreshing to see them on a hot day fanning away with their "many-twinkling" wings at the entrance of the hive, while others are similarly employed inside, creating such a current of

air, that a taper applied to the inlet of the hive would be very sensibly affected by it. Mr. Nutt's book is worth reading for this part of the subject alone:—but our own experience, backed by innumerable other instances within our knowledge, is unfavourable to the use of his boxes; and even those bee-keepers who continue them, as partially successful, have not yet got over the disappointment caused by his exaggerated statements of the produce.

Before entering further on the varieties of hives, we must premise for the uninitiated that bees almost invariably begin building their comb from the top, continuing it down as far as room allows them, and finishing it off at the bottom in a rather irregular curved line. Each comb contains a double set of honey-cells, *dos-à-dos*, in a horizontal position. To support these in common straw hives cross-sticks are used, around which the bees work, so that the comb is necessarily much broken in detaching it from these supports. Now, it having been observed that bees, unless obstructed, always work their combs exactly parallel, and at a certain distance apart, a hive has been constructed somewhat in the shape of a common straw one, only tapering more towards the bottom, and having a lid lifting off just where the circumference is the largest. On removing the lid are seen thin wooden bars about an inch and a half apart, running parallel from the front to the back of the hive, and these, being fixed into a ring of wood that goes round the hive, are removable at pleasure. Now it is obvious that, could we always get the bees to hang

their combs along these bars, the removal of one or two of them at a time would be a very simple way of procuring a fair share of honey without otherwise disturbing the hive; but how to get the bees always to build in this direction, was the question. This Huber solved: he fixed a small piece of comb underneath each of the bars exactly parallel; the bees followed their leader, so that any one of the pendent combs might be lifted up on the bar, the bar be replaced, and the bees set to work again. This starting-point for them to commence from is called the guide-comb, and the hive itself, though somewhat modified, we have the pleasure of introducing to our readers as that of the Greek islands (*Naturalist's Library*, p. 188); the very form, perhaps, from which the Gorycian old man, bringing it from Asia Minor, produced his early swarms;—from which Aristotle himself may have studied,—and which, no doubt, made of the reeds or oziars of the Ilyssus, had its place in the garden of Socrates—

“That wise old man by sweet Hymettus’ hill.”

We must refer our readers to p. 96 of Dr. Bevan’s book for the later improvements upon this hive, as respects brood and honey cells (for these are of different depths), and the fixing of the guide-comb, suggested by Mr. Golding of Hunton, who, together with the Rev. Mr. Dunbar, has rendered very valuable assistance to Dr. Bevan’s researches.

It is no slight recommendation of Mr. Golding to our good graces to learn that so practised a bee-

master has discarded boxes from his apiary, and almost entirely restricted himself to the use of straw hives, and this not from any fancy about their appearance, but from a lengthened experience of their advantage. For ourselves, we dare hardly avow, in this profit-loving age, how many pounds of honey we would yearly sacrifice for the sake of preserving the associations that throng around a cottage-hive. To set up in our humble garden the green-painted wooden box, which Mr. Nutt calls "The Temple of Nature," in place of our time-honoured straw hive, whose sight is as pleasant to our eyes as "the hum of murmuring bee" is to our ears!—we had as lief erect a Pantheon or a red-brick meeting-house on the site of our village church. If our livelihood depended on the last ounce of honey we could drain from our starving bees, necessity, which is a stern mistress, might drive us to hard measures, and, *secundum artem*, they being used to it, we might suffocate them "as though we loved them;" but to give up—and after all for a doubtful or a disadvantage—the pleasant sight of a row of cleanly hives of platted straw, the very form and fashion of one of which is so identified with its blithe inhabitants, that without it a bee seems without its home—to cast away as nought every childhood association,—the little woodcut in Watts's 'Hymns,'—the hive-shaped sugar-basin of the nursery,—the penny print that we have covered with coatings of gamboge—to lose for ever the sight of the new straw hackle that jauntily caps it like the head-dress of an Esqui-

maux beau—to be no longer cheered in the hot dusty city by the refreshing symbol that “babbles of green fields” in the midst of a hardwareman’s shop—this would be too much for us, even though we might thus have assisted, as Mr. Huish would say, “to unlock the stores of apiarian science, and disperse the mists of prejudice by the penetrating rays of philosophy.” We would rather bear the character of heathenish barbarism to the day of our death, and have *Hivite* written on our tomb. Seriously, it is no slight pleasure we should thus forego; and pleasure, simple and unalloyed, is not so cheap or so tangible a commodity in this life that we can afford to throw away anything that produces it, even though it hang but on the gossamer thread of a fancy.

Apart, however, from all such considerations, which, think and write as we may, would, we fear, have but little influence with the practical bee-keeper, we are convinced that the moderate temperature which a straw hive produces, both in summer and winter, will not easily be counterbalanced by any other advantages which boxes offer; and as for management, there is scarcely any system or form to which straw may not be accommodated.

Those who have seen the beautiful bell-glasses full of virgin honey from Mr. Nutt’s hives, which were exhibited lately either at the Polytechnic or Adelaide Gallery, and still more those who have tasted them on the breakfast-table, may perhaps fancy that boxes only can produce honey in so pure and

elegant a form ; but by a very simple alteration in the common straw hive this may be effected, as a reference to Mr. Payne's 'Improved Cottage-hive' will show. His book is a very useful one, from its practical and concise directions, and perfectly free from anything like being "got up." The only fault of his hive seems to be its flat top.

Mr. Bagster's book chiefly recommends itself to us by the promise of a new "Ladies' Safety Hive." We are always a little shy of these schemes for "Shaving made Easy," and "Every Man his own Tooth-drawer," which go to do away with the division of labour, and bring everything "within the level of the meanest capacity ;" and though nothing certainly can be more in character than that the lady-gardener should have her bee-house, where she may observe the workings and habits of this "Feminine Monarchy," yet, for aught we see, it is just as reasonable for her to clean her own shoes as to take her own honey. And yet this is the only object or new feature about Mr. Bagster's plan. Practically, we should consider his centre box to be as much too large as the side ones are too small.

The fact is, that safety from bees is not to be gained by any modification of hive or bee-dress whatever. If a man means to keep bees, he must make them his friends ; and the same qualities which will ensure him golden opinions in any other walk of life are those which make a good bee-master. Firmness of mind with kindness of manner will enable you to do with them what you will. Like

horses, they know if you are afraid of them, and will kick and plunge accordingly. Like children and dogs, they find out in a moment if you are fond of them, and so meet you half way. But, like the best-tempered people in the world, there are times and seasons when the least interruption will put them out—

“ ut fortè legentem
Aut tacitum impellat quovis sermone molestus.”

A sharp answer or a sharp sting on such occasions will only be a caution that we must watch our opportunity better for the future. He who rushes between contending armies must not complain of the flying darts; therefore in a bee-battle, unless you are sure you can assist the weaker party, it is best to keep out of the way. In very hot weather and very high winds, especially if one has much to do or to say, who does not feel a little testy? Bees are the same. There is one other case where interference is proverbially ill-taken—in domestic quarrels; and herein Mr. Cotton assures us that the female spirit is as much alive in the bee as in the human kind. When the time comes in autumn for turning the drones out of the hive (of which we shall speak more fully presently), many think they can assist their bees in getting rid of these unprofitable spouses, and so destroy them as fast as they are turned out: this uncalled-for meddling is often very fiercely resented, and the bee-keeper finds to his cost, like the good-natured neighbour who proffered his mediation on the “toast and bread-and-butter”

question of Mr. and Mrs. Bond, that volunteer peace-makers in matrimonial strife

“Are sure to get a *sting* for their pains.”

At all other times they are most tractable creatures, especially when, as at swarming time, they are in some measure dependent on man's aid. They are, as a villager once told us, “quite humble bees then.” They undoubtedly recognise their own master; and even a stranger, if a bee-keeper, soon finds himself at home with them. What they cannot bear is to be breathed upon; and as people ignorant of their ways are very apt to begin buffeting and blowing when bees seem disposed to attack them, it will be serviceable for them to keep this hint in mind. The Rev. John Thorley, who wrote in 1744, gives a frightful account of a swarm of bees settling upon his maid's head—the fear being not that they would sting her to death, as stories have been told,* but that they would stifle the poor girl, for they covered her whole face. Presence of mind failed neither—he bade her remain quite still, and searched for the queen, whom her loyal people followed with delight as he conducted her safe to her hive. Sometimes, however, where presence of mind is wanting, or

* For fatal cases, one of which is related by Mr. Lawrence, in his *Surgical Lectures*, see Dr. Bevan, p. 333. Animals have been frequently fatally attacked by them. Butler tells of “a horse in the heat of the day looking over a hedge, on the other side of which was a stall of bees: while he stood nodding with his head, as his manner is, because of the flies, the bees fell upon him and killed him.” This exemplifies the proverb of the danger to some folk in “looking over a hedge.”

where they have been accidentally disturbed, very serious consequences ensue. The inhabitants of the Isles of Greece transport their hives by sea, in order to procure change of pasture for their bees. Huish relates (p. 287) that

“ Not long ago a hive on one of these vessels was overturned, and the bees spread themselves over the whole vessel. They attacked the sailors with great fury, who, to save themselves, swam ashore. They could not return to their boat until the bees were in a state of tranquillity, having previously provided themselves with proper ingredients for creating a smoke, to suffocate the bees in case of a renewal of their hostility.”

The Bee-volume of the ‘ Naturalist’s Library ’ supplies us with an anecdote, in which the anger of the bees was turned to a more profitable purpose—

“ A small privateer with forty or fifty men, having on board some hives made of earthenware full of bees, was pursued by a Turkish galley manned by 500 seamen and soldiers. As soon as the latter came alongside, the crew of the privateer mounted the rigging with their hives, and hurled them down on the deck of the galley. The Turks, astonished at this novel mode of warfare, and unable to defend themselves from the stings of the enraged bees, became so terrified that they thought of nothing but how to escape their fury ; while the crew of the small vessel, defended by masks and gloves, flew upon their enemies sword in hand, and captured the vessel almost without resistance.”—p. 194.

It must strike the reader how well furnished this vessel must have been to afford on the moment “ masks and gloves ” for forty or fifty men. In these disturbed times the following receipt to dis-

perse a mob may perhaps be found useful. We have heard of a water-engine being effectively employed in the same service.

“ During the confusion occasioned by a time of war in 1525, a mob of peasants, assembling in Hohnstein, in Thuringia, attempted to pillage the house of the minister of Eleude, who, having in vain employed all his eloquence to dissuade them from their design, ordered his domestics to fetch his bee-hives and throw them in the middle of this furious mob. The effect was what might be expected; they were immediately put to flight, and happy to escape unstung.”—*Nat. Lib.*, p. 195.

As we should be sorry to arouse the fears of our readers, our object being rather to enamour them of bees, we will console them—too much perhaps in the fashion of Job’s friends—with an anecdote which appeared lately in a Scotch newspaper, of an elderly gentleman upon whose face a swarm of bees alighted. With great presence of mind he lifted up his hat, hive-like, over his head, when the bees, by their natural instinct, at once recognizing so convenient a home, betook themselves to his head-gear—it surely must have been a *wide-awake*—which he then quietly conveyed into his garden. Had he fidgeted and flustered, as most old gentlemen—and young ones too—would have done in his situation, he would doubtless have presented the same pitiable object that our readers must remember in Hood’s ludicrous sketch of “an unfortunate *Bee-ing*.”

One of the most dangerous services, as may well be imagined, is that of taking their honey, when

this is attempted without suffocating, or stupefying, or any of those other methods which leave the hive free. This should be done in the middle of a fine day when most of the bees are abroad ; and then in those hives where the removal can be made from the top the danger is more imaginative than real. The common barbarous plan is to suffocate the whole stock with sulphur, and then, as dead men tell no tales, and dead bees do not use theirs, it is very easy to cut out the comb at your leisure. But in any case Mr. Cotton's plan is far preferable. Instead of suffocating, he stupefies them. Instead of the brimstone match, he gathers, when half ripe, a fungus (*F. pulverulentus*) which grows in damp meadows, which countryfolk call "puff-balls," or "frog's cheese," or "bunt," or "puckfist," dries it till it will hold fire like tinder, and then applies it to the hive in what he calls a "smoker." The bees being thus rendered quite harmless, any operation of the hive, such as taking the honey, cutting out old comb, removing the queen, or joining stocks, may be most easily performed. The bees may be then handled like a sample of grain. This plan of fumigation—which he does not profess himself the author of, but to have borrowed from the work of the before-mentioned Mr. Thorley, reprinted in the 'Bee-book'—we consider as the most valuable of the practical part of Mr. Cotton's book,—practical, we mean, to apiarian purposes ; for there is excellent advice leavened up with the bee-matter, which will apply equally to all readers. The rest of his system, with

which we own ourselves to have been a little puzzled, is too near an approximation to Nutt's to require further explanation or trial. We should guess from the present form of his book—which, originally published in the form of two 'Letters to Cottagers from a Conservative Bee-keeper,' is now sent forth in one of the most elegant volumes that ever graced a library-table—that he is convinced that his plan is not advantageous for the poor; and therefore, though upwards of 24,000 copies of his first 'Letters' were sold, he has forborne to press further upon them a doubtful good. This is, however, our own conjecture entirely, from what we know of the failure of his system among our friends, and from what we gather of his own character in the pages of his book. In this we think he has acted well and wisely. Delighted as we ourselves have been with many parts of his volume, we think he has failed in that most difficult of all styles to the scholar—"writing down" to the poor. In saying this we mean no disparagement to Mr. Cotton, for we are not prepared at this moment with the name of a single highly-educated man who has completely succeeded in this task. Bunyan and Cobbett, the two poor man's authors in very different schools, came from the tinker's forge and the plough-tail. It is not enough to write plain Saxon and short sentences—though how many professed writers for the unlearned neglect even points like these!—the mode of thinking must run in the same current as that of the people whom we wish to instruct and please, so that nothing short of

being one of them, or living constantly among them,

“ In joy and in sorrow, through praise and through blame,” being conversant not only with their afflictions and enjoyments, and ordinary life, but even with their whims and crotchets, their follies and crimes, will fit a man to be their book-friend. Where a million can write for the few, there are but few who can write for the million. Witness the unread pamphlets, written and distributed with the kindest feeling, that crowd the cottager’s shelf. We grieve that this a fact, but we are convinced of the truth of it. We grieve deeply, for there are hundreds of scholarly men at this moment writing books, full of the best possible truths for the lower—and indeed for all—classes of this country, and thousands of good men distributing them as fast as they come out, in the fond idea that these books are working a change as extensive as their circulation.* That they are doing good in many quarters we gladly admit, but we will venture to say that there is not one among the many thousands published that will hold its rank as a cottage classic fifty years hence ; and that not from want of interest in the subjects, but of style and tone to reach the poor man’s heart. The mode of thought and expression in some of these well-meaning books is perfectly ludicrous to any one who has personal knowledge of a labourer’s habit of mind. However, Mr. Cotton’s book, though not quite as successful as we

* The sale of such books is no test of their real popularity, as a hundred are given to, where one is bought by, the poor.

could wish, is very far indeed from partaking of the worst defects of books of this class. Indeed he has so nearly reached the point at which he has aimed, that we feel continually annoyed that he just falls short of it. We do not think him happy in his jokes, nor at home in his familiarity. From the familiar to the twaddling is but a step, and a very short step too. His Aristotle has taught him the use of proverbs to the vulgar, which he has everywhere taken advantage of, though, with singular infelicity, he has printed them in a character—old English—that not one out of a hundred of the reading poor can understand. He translates a bit of Latin for the benefit of his "Cottager," but leaves a quotation from Pindar to be Greek to him still! It is, however, want of clearness and method—great faults certainly in a didactic work—of which we have chiefly to complain in his 'Short and Simple Letters;' but, taking the work as it comes to us in its present form, with its exquisite woodcuts, perfection of dress, prelude of mottoes (of which we have not scrupled to avail ourselves), list of bee-books (which, though imperfect, particularly as to foreign works, is the first of the kind)—appendices—reprints—extracts, &c.—we hardly know a book of the kind that has of late pleased us more. The ingenuity with which every ornament, within and without, introduces either the bee itself, or its workmanship, reflects great credit on the designer, and on the engraver, Mr. J. W. Whimper, to whose labours the author pays a well-earned compliment.

Professing no sort of arrangement, it is the perfection of a scrap-book for the gentleman or lady bee-keeper.

The great interest, however, in Mr. Cotton's work lies in the conclusion. He is one of that noble crew, mainly drafted from the ranks of aristocratic Eton, that have gone out in the first missionary enterprise that has left the shores of England, worthy of the Church and the country that sent them. The good ship *Tomatin* sailed from Plymouth for New Zealand on the 26th of December 1841, St. Stephen's day, with a "goodly fellowship" of emigrants, schoolmasters, deacons, and priests, *with a Bishop at their head*. And we, an Apostolic Church, have been these many years in learning the first lessons of Apostolic discipline and order! wasting the lives and energies of an isolated clergy—a few forlorn hopes sent out without a commander to conquer the strongholds of heathenism. However, it is never too late to do well. The solemn ceremonial of the consecration of five bishops to the colonies, within the walls of Westminster Abbey, which produced an effect on those who witnessed it which will not soon pass away, and the great further increase in the colonial episcopate which has since taken place, show that the Church is not neglectful of her duties, though these, like the Bishop of New Zealand, should have led the van on the foundation of the colonies, instead of following after a lapse of years, when the usurpations of schism and disorder have more than trebled the difficulty of their task. There were among the

crew of that gallant vessel—and not least of that number, the chief Shepherd himself, and our author Bee-master—men of the highest mental attainments, of the gentlest blood, on whom our Public Schools and Universities had showered their most honourable rewards, and to whom, had they remained in this country, the most splendid prospects opened—who have yet borne to give up all these prospects and sever all the ties of blood and old affection, to cross at the call of the Church, in the service of their Master, half a world of ocean to an island unfrequented and barbarous, and where, for at least many years to come, they must give up all idea, not of luxury and comfort, but of what they have hitherto deemed the very necessities of existence; and, what is more to such men, the refinements of intellectual intercourse and the charities of polished life. God forbid that we should not have a heart to sympathise also in the struggles of those uneducated and enthusiastic, but often misguided men, who are sent out with the Bible in their hand by voluntary associations on a pitiable payment barely greater than what they might have earned with their hands in their own parish! it is the system and the comfortable committee at home with which we quarrel, not with the painful missionaries themselves; but while we grieve over the martyred Williams, we have nothing in common with that sympathy which is monopolised by the exertions of missionary artizans, enured from their cradle to a life of hardship, and which can feel nothing for the tenfold deprivations,

mental and bodily, both in what they encounter and what they leave behind, which the rich and the educated endure, who are authoritatively commissioned to plant the standard of the Cross within the ark of Christ's Church in our distant colonies. It becomes us who sit luxuriously in our drawing-rooms at home, reading the last new volume in our easy chairs, to cast a thought from time to time on the labours of these men, of like tastes and habits with ourselves, and encourage them in their noble work, be it in New Zealand or elsewhere, not only in good wishes and easily-uttered "Godspeeds," but in denying ourselves somewhat of our many daily comforts in forwarding that cause which they have "left all" to follow.*

But the connection which all this has with our present subject is, that in the same ship with this "glorious company," Mr. Cotton has taken out with him four stocks of bees: the different methods of storing away may be seen in page 357. Seizing, and, we are sure, gladly seizing, a hint thrown out in Mr. Petre's book on New Zealand, of the great

* Great credit is due to the New Zealand Company, who have consulted their interest as well as their duty in the liberality of their Episcopal endowment. There can be no doubt that the establishment there of a regular clergy will be a great inducement to the best class of settlers to fix on such a spot for the port of their destination. A large though inadequate sum having been already collected for the general purposes of founding colonial bishoprics, we would now suggest to our ecclesiastical rulers that separate committees should be forthwith formed of persons interested in the several colonies, for increasing to something like a proper sum Episcopal endowment for furthering the cause of the Church in each particular See.—[This suggestion has not been thrown away.—Second Edition.]

honey-harvest in the native flowers, with no labourers to gather it, he is carrying out the first bees which have ever visited those islands. "I hope," he says—and who does not join in this hope of Bishop Selwyn's chaplain?—"that many a busy bee of mine will

Gather honey all the day
From every opening flower,

of *Phormium tenax* in New Zealand. . . . I hope," he adds, "a bee will never be killed in New Zealand, for I shall start the native bee-keeper in the no-killing way; and when they have learned to be kind to them, they will learn to be more kind one to another."

It is probable that the produce of the bees may be made useful to the inhabitants themselves; but we much question whether any exportation can be made of wax or honey. It is too far to send the latter; and, in wax-gathering, the domesticated hives can never compete with the wild bees' nests of Africa, which furnish much the largest amount for our markets. Sierra Leone, Morocco, and other parts of Africa, produce four times as much wax for our home consumption as all the rest of the world together. The only other country from which our supply has been gradually increasing is the United States, and that is but small. The import of wax altogether has been steadily declining: in 1839 it came to 6314 cwts.; in 1842 it was but 4483. The importation, however, of honey has, in the last few years, increased in an extraordinary degree; 675 cwts. being entered in the year ending January,

1838, and 3761 cwts. in 1842: the foreign, West Indies, Germany, and Portugal, having furnished the greater part of this increased supply. The honeys of Minorca, Narbonne, and Normandy are the most esteemed in the markets for their whiteness. We wish we could believe the decreased importation of wax arose from the more extensive cultivation of the bee in this country; but we fear that the daily—rather, nightly—diminishing show of wax-candles on our neighbours' tables, and the murderous system of our honey-farmers, combined with the increased consumption of foreign honey—tell a different tale. It would be a better sign of bee-prosperity in England if the increase in the importation were removed from the honey to the wax; for the staple of the wax of commerce is the produce of the wild bee—of the honey of commerce that of the domesticated bee; and it is a singular fact, illustrating the history of these two species in relation to civilised and uncivilised man, that, while the bushmen of the Cape look with jealousy on the inroads of cultivation, as destroying the haunts of the only live-stock they possess, the Indians of America consider the same insect as the harbinger of the white man, and say that, in proportion as the bee advances, the red man and the buffalo retire.

Washington Irving, in his 'Tour in the Prairies,' says,—

"They have been the heralds of civilization, steadfastly preceding it as it advanced from the Atlantic borders: and some of the ancient settlers of the West pretend to give the

very year when the honey-bee first crossed the Mississippi. The Indians, with surprise, found the mouldering trees of their forests suddenly teeming with ambrosial sweets: and nothing, I am told, can exceed the greedy relish with which they banquet for the first time upon this unbought luxury of the wilderness."

We have spoken of the possibility of bee-pasturage being over-stocked, and such may be the case in certain localities in England; but we are very confident that this is not the general state of the country. We are assured that hives might be multiplied in England tenfold, and yet there would be room: certainly, more than five times the quantity of honey might be taken. But then it will require an improved system of management, more constant attention paid to the hive, more liberal feeding in spring and autumn, and more active measures against their chief enemies. In all these matters we must look to the higher classes to take the lead. We know many, both rich and poor, who do not keep bees, on account of the murder they think themselves forced to commit: let such be assured that this slaughter is not only unnecessary, but unprofitable too. But, on the other hand, let no one fancy that all he has to do is to procure a swarm and a hive, and set it down in the garden, and that streams of honey and money will forthwith flow. Bees, like everything else that is worth possessing, require attention and care. "They need," said a poor friend of ours, "a deal of shepherding:" and thus, to the cottager who can afford to give them his

time, they may be made a source of great profit as well as pleasure. Our own sentiments cannot be given better than in Mr. Cotton's words:—

“I would most earnestly beg the aid of the clergy and resident gentry—but, above all, their good wives; in a word, of all who wish to help the poor who dwell round about them in a far humbler way, yet perhaps not less happily; I would beg them, one and all, to aid me as a united body in teaching their poor neighbours the best way of keeping bees. . . . A row of bees keeps a man at home; all his spare moments may be well filled by tending them, by watching their wondrous ways, and by loving them. In winter he may work in his own chimney corner at making hives, both for himself and to sell. This he will find almost as profitable as his bees, for well-made hives always meet with a ready sale. Again, his bee-hives are close to his cottage-door; he will learn to like their sweet music better than the dry squeaking of a pothouse fiddle, and he may listen to it in the free air, with his wife and children about him.”

The latter part of this has, we fear, a little too much of the green tint of Arcadia. It is seldom indeed that you can get a husbandman to see the peculiar excellences and beauties of his own little world; though it is only fair to add, that where you find the exception, the bee-master is for the most part that man. The great matter is to get the man who does love “the dry squeaking of the pothouse fiddle,” and the wet potations that succeed thereon, to keep bees: and this can only, and not easily then, be done by showing him the profit. Fair and good housewives—if ye be readers of the Quarterly—don't bore him with long lectures; don't heap upon him

many little books ; but *give* him a hive of the best construction—show him the management—and then *buy his honey* ; buy all he brings, even though you should have to give the surplus to some poor gardenless widow. But only buy such as comes from an improved hive—and you can't easily be deceived in this—which preserves the bees and betters the honey.

Then, when you pay him, you may read to him, if you will, the wise rules of old Butler—*exempli gratiâ* :—

“ If thou wilt have the favour of thy bees that they sting thee not, thou must not be unchaste or uncleanly ; thou must not come among them having a stinking breath, caused either through eating of leeks, onions, garlic, or by any other means ; the noisomeness whereof is corrected by a cup of beer : thou must not be given to surfeiting or drunkenness : thou must not come puffing and blowing unto them, neither hastily stir among them, nor violently defend thyself when they seem to threaten thee ; but, softly moving by, thy hand before thy face, gently put them by : and, lastly, thou must be no stranger to them. In a word, thou must be chaste, cleanly, sweet, sober, quiet, and familiar : so will they love thee, and know thee from all other.”

He makes a very proper distinction, which our Teetotal Societies would do well to observe, between “ a cup of beer ” and “ drunkenness ; ” and indeed there seems to be a kind of bee-charm in a moderate draught, for Mr. Smith, a dry writer enough in other respects, says, “ Your hive being dressed, rub over your hands with what beer and sugar is left, and that will prevent the bees from stinging them ;

also drink the other half-pint of beer, and that will very much help to preserve your face from being stung. (p. 34.)

We hold to the opinion already expressed of presence of mind being the best bee-dress, notwithstanding the anecdote told of M. de Hofer, Conseiller d'Etat du Grand Duc de Baden, who, having been a great bee-keeper, and almost a rival of Wildman in the power he possessed over his bees, found, after an attack of violent fever, that he could no more approach them without exciting their anger—in fact, “when he came back again, they tore him where he stood.” “Here, then, it is pretty evident,” says the doctor who tells the story, “that *some change had taken place in the Counsellor's secretions*, in consequence of the fever, which, though not noticeable by his friends, was offensive to the olfactory nerves of the bees.” Might not a change have taken place in the Counsellor's nerves?

As Critics as well as Counsellors may be stung, we have, for our own good and that of the public, examined all the proposed remedies, and the result is as follows:—Extract at once the sting, which is almost invariably left behind: if a watch-key is at hand, press it exactly over the wound, so that much of the venom may be squeezed out; and in any case apply, the sooner of course the better, laudanum, or the least drop of the spirit of ammonia. Oil and honey, which are also recommended, probably only act in keeping off the air from the wound. The cure varies very much with the constitutions of indi-

viduals; but the poison being acid, any alkali will probably be serviceable.

But, with reference to the cottager, we must consider the profit as well as the sting; and this it will be far better to underrate than exaggerate. Tell a poor man that his bees, with the most ordinary care, will pay his rent, and he will find that your word is good, and that he has something to spare for his trouble; he may then be led to pay the same respect to his little lodgers as the Irish do to the less cleanly animal that acts the same kind part of rent-payer by them. But when the marvellous statistics of bee-books are laid before a labourer, their only effect can be to rouse an unwonted spirit of covetousness, which is more than punished by the still greater disappointment that ensues. Here follows one of those quiet statements, put forth with a modest complacency that out-Cobbetts Cobbett:—

“ Suppose, for instance, a swarm of bees at the first to cost 10s. 6d., to be well hackled, and neither them nor their swarms to be taken, but to do well, and swarm once every year, what will be the product for fourteen years, and what the profits, of each hive sold at 10s. 6d. ?—

Years.		Hives.		Profits.		
				£.	s.	d.
1	—	1	—	0	0	0
2	—	2	—	1	1	0
3	—	4	—	2	2	0
4	—	8	—	4	4	0
5	—	16	—	8	8	0
6	—	32	—	16	16	0
7	—	64	—	33	12	0
8	—	128	—	67	4	0

Years.		Hives.		Profits.		
				£.	s.	d.
9	-	256	-	134	8	0
10	-	512	-	268	16	0
11	-	1024	-	537	12	0
12	-	2048	-	1075	4	0
13	-	4096	-	2150	8	0
14	-	8192	-	4300	16	0

“ N.B. Deduct 10s. 6d., what the first hive cost, and the remainder will be clear profit, supposing the second swarms to pay for hives, hackles, labour, &c.”

Mr. Thorley, from whose book the above statement is taken, had better have carried it on three years further, which would have given him within a few pounds of 35,000*l.*—a very pretty fortune for a cottager's eldest daughter: the only difficulty would be to find the father-in-law who had a heart to renounce a capital that doubled itself every year. It is like Cobbett's vine, that on a certain system of management was to produce so many upright stems, and from each of these so many lateral branches, and on each lateral so many shoots, and on each shoot so many buds, and every bud so many bunches and pounds of grapes—so that you might count the quantity of wine you were to make on the day that you planted the tree. There is nothing like an array of figures if you wish to mislead. All seems so fair, and clear, and demonstrative—no appeals to the passions, no room for a quibble—that to deny the conclusion is to deny that two and two make four. Yet, for all this, the figures of the arithmeticians have produced more fallacies than all the other figures of

the Schools. We would infinitely prefer the errors of the enthusiast to the unrelenting numbers of the mathematician, and the charitable laxity of the rule of thumb to the pert precision of the Rule of Three. We shall enter, therefore, into no exact calculation of profit and loss, which is, after all, almost entirely dependent on the seasons and the degree of care bestowed. Statistics, such as Mr. Thorley's, might just be as well applied to the stock of graziers without any consideration of the number of acres they held; for he gives us no receipt how to find pasturage for 8000 bee-hives.

Dr. Warden, a physician of Croydon, who wrote in the year 1712 a book called 'The True Amazons, or the Monarchy of Bees,'—and of whom we can discover nothing more than that the front of his beehouse was "painted with lions and other creatures not at all agreeable"—found the neighbouring furze of Coombe and Purley not "unprofitably gay," if we may believe his assertion that his bees brought him in 40*l.* a year: he might have passed rich at that time in such a locality, if his physician's fees brought him in an equal sum. That the ancients did not neglect the profit to be derived from their hives, we learn from Virgil's old 'gardener—to whom we cannot too frequently recur—and from two veteran brothers mentioned by Varro—the type perhaps of the Corycian of the Georgics—who turned the little villa and croft left them by their father into a beehouse and bee-garden—realising, on an average, 10,000 sesterces a-year. They seem to have been

thrifty old bachelors, and took care to bide a good market. Among the plunder of Verres were 400 amphoræ of honey.

We will now suppose that, having made up our mind on the matter of profit, and being sting-proof, we have got in an old-fashioned straw hive, a stock which we purchased in autumn for a guinea, safely placed under our heath-thatched bee-house; that we have also got one of the improved Grecian straw hives ready to house the first swarm in. Some fine warm morning in May or June, a cluster of bees having hung out from the hive some days before, the whole atmosphere in the neighbourhood of the bee-house seems alive with thousands of the little creatures, whirling and buzzing, passing and repassing, wheeling about in rapid circles like a group of maddened Bacchanals. This is the time for the bee-master to be on the alert. Out runs the good housewife with the frying-pan and key—the orthodox instruments for *ringing*—and never ceases her rough music till the bees have safely settled in some neighbouring bough. This custom, as old as the birth of Jupiter, is one of the most pleasing and exciting of the countryman's life; Hogarth, we think, introduces it in the background of his 'Country Noises,' and there is an old coloured print of bee-ringing still occasionally met with on the walls of a country inn that has charms for us, and makes us think of bright sunny weather in the dreariest November day. We quite feel with Mr. Jessé that we should regret to find this good old custom fall into disrepute. Whether, as Aristotle

says, it affects them through pleasure, or fear, or whether indeed they hear at all, is still as uncertain as that philosopher left it, but we can wish no better luck to every bee-master that neglects the tradition than that he may lose every swarm for which he omits to raise this time-honoured concert.*

The whole matter of swarming is so important, that we should be doing wrong to pass it over without giving the following graphic account from the ‘ Naturalist’s Library :’—

“ The laying of drones’ eggs having terminated, the queen, previously large and unwieldy, becomes slender in her figure and more able to fly, and begins to exhibit signs of agitation. She traverses the hive impatiently, abandoning the slow and stately step which was her wont, and in the course of her impetuous progress over the combs she communicates her agitation to the workers, who crowd around her, mounting on her back, striking her briskly with their antennæ, and evidently sharing in her impatience. A loud confused noise is heard throughout the hive, and hardly any of the workers are observed going abroad to forage ; numbers are whirling about in an unsettled manner in front of the hive ; and the moment is come, to a considerable portion of the family, for

* The story goes that the Curetes, wishing to hide the birth of Jupiter from his father Saturn, set up a clashing of cymbals to drown the noise of his infant cries :—

“ Cum pueri circùm puerum pernice choreâ
Armati in numerum pulsant æribus æra.”

Lucret. ii. 635.

The noise attracted a swarm of bees to the cave where the child was hid, and their honey nourished him : hence the origin of *ringing*. Δοκοῦσι δὲ χαλπεῖν αἱ μέλιτται καὶ τῷ κρότῳ κ. τ. λ.—*Aristot. H. An.*, p. 299. “ Si quando displicatæ sunt, cymbalis et plausibus numero reducunt in locum unum.”—*Varro, R. R.*, iii. 16, 7.

“ Tinnitusque cie, et Matris quate cymbala circùm.”

Georg. iv. 64.

bidding adieu to their ancient abode. All at once the noise of the interior ceases, and the whole of the bees about the doors re-enter ; while those returning loaded from the fields, instead of hurrying in as usual, hover on the wing, as if in eager expectation. In a second or two, some workers present themselves again at the door, turn round, re-enter, and return instantaneously in additional numbers, smartly vibrating their wings, as if sounding the march ; and at this signal the whole swarm rushes to the entrance in an overwhelming crowd, streaming forth with astonishing rapidity, and filling the air in an instant, like a dark cloud overhanging their late habitation. There they hover for a moment, reeling backwards and forwards, while some of the body search in the vicinity for a tree or bush which may serve as a rallying point for the emigrants. To this they repair by degrees, and, provided their queen has alighted there, all, or at least the greater part, crowd around, and form a dense group, sometimes rounded like a ball, sometimes clustered like a bunch of grapes, according to the nature of the resting-place they have fixed on.”—p. 138.

This first settlement is, without doubt, merely a rendezvous before their final emigration. If not hived they will soon be off, and in a direct line, for some convenient spot which has been marked by them before. We have known them make straight for an old hollow pollard, the only one to be found within a mile or two of the hive. The old queen always accompanies the first swarm ; and for this a fine day is reckoned more necessary than for the after-swarms, as it is the old lady, says Mr. Golding, that shows the greatest dislike to leave home in bad weather. If this swarm again sends forth a colony the same year, it is the same queen again who puts

herself at the head of her nomade subjects. Indeed, notwithstanding Mr. Golding's remark, there is very little of the old woman about her.

There seems to be no unerring method by which the exact time when the first swarm will leave the hive can be determined—their hanging from the entrance being very fallacious—except by watching the general state of things within. With the after-swarms, however, there is a most curious and certain sign in the “piping” or “trumpeting” of the queen and the princesses, to which we have before referred. About the ninth day from the issue of the first swarm, if another colony is about to leave the hive, this singular duet, in most regular intonation, between the emerged queen and the princess still a prisoner in her cell, is heard; and, extravagant as the account may seem, and confused and embellished as it has been from the times of Aristotle and Virgil till recent days, it is now the practical sign by which every attentive bee-keeper judges of the time of emigration of the after-swarms.

The second swarm is called a “cast,”* the third a “smart,” the fourth a “squib.” A swarm from a swarm is called a “maiden or virgin swarm,” and the honey is reckoned more pure. It seldom, how-

* The following dogged “proverbial philosophy” will give the supposed relative values of early and late swarms:—

“A swarm in May
Is worth a load of hay;
A swarm in June
Is worth a silver spoon;
A swarm in July
Is not worth a fly.”

ever, happens that there are more than two from the same hive, except in such a year as the present, which has been a glorious bee-year. Such also was 1832; and there are on an average two good years in every ten. 1838 and 1839 were particularly disastrous to the bees.

It is time to say something of Her Majesty of the Hive. She is the mother as well as queen of her people, laying from 10,000 to 30,000 eggs in a year, and it is not till she gives symptoms of continuing the race that the full tide of her subjects' affection is poured forth towards her. They prefer a Victoria to an Elizabeth. There are different cells formed for the queen, the worker, and the drone, and she deposits eggs in each accordingly. The bees, like a wise and loyal people as they are, do not stint their sovereign to the same narrow mansions as content themselves; they build their royal cells much thicker and stronger, and of more than twice the size: nay, unlike the surly blacksmith at Brighton, who hesitated to give up his house for the convenience of his sovereign, they think nothing of pulling to pieces and converting several of their common cells when royalty requires it, and vote with alacrity in their committee of supply every demand made for the extension and improvement of their sovereign's palace. When finished, their miniature Windsors resemble the inverted cup of an acorn somewhat elongated. We said that each has its peculiar cells, and that the queen lays only drone eggs in drone cells, and so on. But it has happened,

either in her flurry or from some unaccountable accident, that a drone egg has fallen into a royal cell. Time goes on, and the egg swells, and becomes a larva, and then a pupa, and the bees feed it with royal food, watch its progress with anxious care, and hover in the antechamber in nervous expectation of the royal birth—judge then their surprise when, instead of a princess royal, out walks the awkward and mystified changeling of a drone. Their innate and extreme sense of loyalty does not at first allow them to discover their mistake; they crowd round about him, backing with reverence, as they always do in the presence of their real queen: meanwhile the foolish fellow, addled by their homage, and yet chuckling at his unexpected dignity, turns himself about with the incredulous stare of Hassan the sleeper when he awoke in the palace and robes of the khalif, and, with the strut of dear old Liston in the ‘Illustrious Stranger,’ so soon commits himself by his ungainly actions, that they quickly find out their error, and turn from him in unmitigated disgust. This scene has been actually observed.

It would be an endless work to recount the many stories told of the devoted attachment of these good people to their queen. Her presence among them is their life and glory. She is the mainspring upon which all their work, their order, their union, their happiness seems to turn. Deprive them of her, and all is confusion, disorder, and dismay. They seem to mourn for her when dead, and can with difficulty be withdrawn from her corpse. The following ex-

tract from a private letter describes such a scene as all bee-books are full of:—

“Last year I was sent for by a lady, who, when she wants my assistance, sends all over the parish for me with a little note with the picture of three bees in it, and this calls me at once to her aid. One of her bee-hives—a glass one—I found when I arrived in a state of the greatest confusion, the inmates running up and down, and making a fearful noise. We soon discovered the reason of this. On looking about the bee-house, we observed her majesty quietly taking an airing abroad unknown to her subjects,—she had got through a hole which had been left for air. We thought it was time for her majesty to return home, so we quietly put her back to her subjects. Where all had been confusion perfect peace instantly prevailed—the news was communicated in a moment—the pleasure of the little loyalists was manifested by a gentle placid motion of their wings, and they returned forthwith to their former labours.”

In this case the queen had slipped out by a back door, wishing no doubt to enjoy that privacy and quiet which royalty so often sighs after: at other times, when she walks out in public, she meets with that respectful homage and freedom from interruption which may read a good lesson to the British public.

“There I saw the old Queen bee walking round the stone at the mouth of the hive as if she was taking an airing, and of all the sights I ever saw in my life nothing ever pleased me better. I would not have lost seeing it on any account—to witness them pay homage to her as she walked round in the open air pleased me exceedingly.”—*Smith*, p. 94.

“Whenever the Queen goes forth to take the air, as she often does, many of the small bees attend upon her, guarding her before and behind. By their sound I have known

when her majesty has been coming forth, and have had time to call persons who have been desirous of seeing her.”—*Sydserff*, ch. iii.

With the alteration of a few words, who would not think this the description of the Terrace at Windsor, or the Chain-pier at Brighton, and of the English people when on their best behaviour? All the wonderful tricks with which Wildman the bee-conjurer astonished the last generation were effected by taking advantage of their instinctive loyalty. He made the bees follow him where he would, hang first on this hand, then on that, or settle wherever his spectators chose. His secret consisted in having possession of the queen, whom they clustered round wherever he might move her. Nor are they merely summer friends; the workers will defend their queen in the utmost strait, and lay down their lives for her. For they sting but once, and that sting is death to them; “*Animasque in vulnere ponunt.*” How many a human sovereign has been left in his last hours by those who had basked in the sunshine of his power! The bees teach us a better lesson. Dr. Evans, whose poem of ‘The Bees,’ though sometimes rather Darwinian, is extremely interesting and true to nature, gives in his notes this affecting anecdote:—

“A queen in a thinly-peopled hive lay on a honeycomb apparently dying; six workers surrounded her, seemingly in intent regard; quivering their wings as if to fan her, and with extended stings, as if to keep off intruders or assailants. On presenting them honey, though it was eagerly devoured

by the other bees, the guards were so completely absorbed in their mournful duty, as entirely to disregard the proffered banquet. The following day the queen, though lifeless, was still surrounded by her guard; and this faithful band of attendants, as well as the other members of the family, remained at their post till death came kindly to extinguish both their affection and their grief; for though constantly supplied with honey, not a bee remained alive at the end of four days."

We must not, however, invariably expect the same conduct; perhaps, indeed, if it were so, it would lower the quality of the feeling, and reduce it to too mechanical an instinct. Bees, like men, have their different dispositions, so that even their loyalty will sometimes fail them. An instance not long ago came to our knowledge, which probably few bee-keepers will credit. It was that of a hive, which, having early exhausted its store, was found, on being examined one morning, to be utterly deserted:—the comb was empty, and the only symptom of life was the poor queen herself, "unfriended, melancholy, slow," crawling over the honeyless cells, a sad spectacle of the fall of bee greatness. Marius among the ruins of Carthage—Napoleon at Fontainebleau—was nothing to this.

That the mother of so large a family and queen of so rich a store passes her honeymoon somewhere may be reasonably supposed, but such is her innate modesty that the time and scene of her matrimonial trip are still involved in the utmost mystery. Whether she loves the pale moonlight, or whether, as we are

inclined to suppose with Huber, she prefers a bright May morning, and, Hero-like, lights her torch of love on high, in either case she scrupulously shuns the curious eye of man, who has in vain endeavoured to pry into those mysteries which she as industriously conceals.

If it should be thought surprising that men who have devoted their lifetime to studying the habits of bees have failed to come to any satisfactory conclusion on this subject, it will be far more a matter of wonder to learn what they have been enabled to discover. We allude particularly to the power possessed by the workers, when they have lost their natural monarch, of converting the grub of one of the common bees into a royal, and consequently prolific personage. Such an extraordinary assertion, first published by Schirach, though probably known in earlier times, may be supposed to have met with no ordinary opposition, but it has been confirmed by repeated observation and experiment, and is as well attested—thanks to Huber especially—as any such facts can ever be. Being so established, we may assert it to be (without any reservation whatever) by far the most extraordinary fact ever brought to light in natural history. Fully to comprehend it, we must refer our readers to the great differences we stated in the former part of this paper to exist between the workers and the queen, or rather to the more minute anatomical distinctions given by entomological writers; and then they are called upon to believe that, by enlarging three common cells into one,

and feeding the worm, not more than three days old, with a peculiar food, richer than the common bee-bread — called, from its queen-making qualities, “royal jelly,” — not only is its body lengthened, its wings shortened — its wax-pockets, and its bread-basket and the down on its legs obliterated — its sting and proboscis altered in shape — its fertility developed — but all its instincts and habits so completely changed, that no difference whatever is observable, when it emerges from the cell, from the rightful queens, either in the character and duties it assumes, or in the reverence paid it by the masses. What would not Napoleon, when he assumed the purple, have given for some jars of this “royal jelly !”

We much wish that we had space to describe at length the jealousy and combats of rival queens, the senses of bees, and their architecture, and general economy of the hive ; but half the interest of these things depends on that freshness and minuteness of detail which is best given in the words of the original eye-witnesses. It is only by a figure that we can include in this class him who has deservedly been placed at the head of all writers upon bees — the intelligent and enthusiastic Francis Huber. No one who ever hopes to be master of a bee-house should be ignorant of his services, nor of the difficulties under which he performed them. His name has been so long before the public that many will learn with surprise that he died, at the age of eighty-one, so late as December, 1831. An appropriate

tribute* has been paid to his memory by his brother naturalist De Candolle, from which the following facts of his life are taken.

Among the witty and the vain who formed Voltaire's applauding clique at Ferney was one who, though remarkable in his own day even in so brilliant an assemblage for his conversation and accomplishments of society, would scarcely have been remembered but for his more illustrious son. This was John Huber, the father of him who is the Father of Bee-masters; and Francis himself probably enjoyed the honour, at whatever that may be rated, of being patted on the head by the *patriarch* of Ferney: for he was a precocious and enthusiastic child, and the pride of his father, who imparted to him that love of science which, while it produced the misfortune, proved also the comfort of his life. One of his relations had ruined himself in the search after the philosopher's stone; and he himself impaired God's greatest blessing of sight at the early age of fifteen, by the ardour with which he devoted himself to philosophical studies. His father sent him to Paris to be under the care of the most experienced physicians; but though his general health, which had also given way, was restored by the sensible prescription of rural life and diet, the cataract baffled the skill of the oculist Venzel, and he was sent home with no better promise than that of a confirmed and increasing blind-

* Translated in the Edin. N. Philosoph. Journal for April, 1833. De Candolle has also named a genus of Brazilian trees, in his honour, *Huberia laurina*. It should have been a bee-plant.

ness. "His eyes, however," says his biographer De Candolle, "notwithstanding their weakness, had, before his departure and after his return, met those of Maria Aimée Lullin, a daughter of one of the syndics of the Swiss republic. They had been companions at the lessons of the dancing-master, and such a mutual love was cherished as the age of seventeen is apt to produce." It was far too deep and too true an affection to run smooth. The father of the girl naturally regarded the growing blindness of the youth as destructive of all advancement in life, and positively forbade his suit. Meanwhile poor Huber dissembled his increasing infirmity as well as he could, and, with a pardonable fraud, spoke as though he could really see. There was at least language enough in his eyes for Maria Lullin, and she, as resolute as her father, would allow no subsequent misfortune to quench the light of other and happier days. At twenty-five, and not till then, did the law allow her to decide for herself, and seven long years was a dangerous trial for any girl's fortitude, beset with the remonstrances of her friends, and the daily vanishing hopes of restoration of sight to her lover. But she was nobly faithful. She was proof against all persecutions and persuasions; and when the seven weary years were at length over, she gave her hand where her heart had been given long before—to him who, though her husband, could scarcely act the part of her protector. The youthful partners at the dancing-academy naturally ripened, as our Scotch friends can best understand, into partners for

life. And she became not only Huber's wife, but his assistant in his researches; she was "eyes to the blind," his reader, his secretary, his observer.

No higher praise can be given to Huber than to say that he was worthy of her. He was the most affectionate and devoted of husbands.

"Her voice was all the blind man knew,
But that was all in all to him!"

"As long as she lived," he used to say in his old age, "I was not sensible of the misfortune of being blind." And, alluding to her small stature, he would apply to her the character of his favourite bees,

"Ingentes animos angusto in pectore versant."

It was, we believe, this true story that furnished the episode of the Belmont family in *Madame de Staël's* 'Delphine.'

Huber was fortunate not only in his wife but in his servants and children. Burnens, who under his tuition and direction made the greater part of his observations upon bees for him, has this due tribute paid him by his master and his friend:—

"It is impossible to form a just idea of the patience and skill with which Burnens has carried out the experiments which I am about to describe. He has often watched some of the working-bees of our hives, which we had reason to think fertile, for the space of four-and-twenty hours without distraction, and without taking rest or food, in order to surprise them at the moment when they laid their eggs. I frequently reproached myself for putting his courage and his patience to such a trial; but he interested himself quite as much as I did in the success of our experiments, and he

counted fatigue and pain as nothing in comparison with the great desire he felt to know the results. If then there be any merit in the discoveries, I must share the honour with him; and I have great satisfaction in rendering him this act of public justice."

We gladly give a place to this generous testimony, because, in the translation which we have seen of Huber's work, the preface which contains it is altogether omitted; and it is only right that this faithful and intelligent man should share whatever of earthly immortality belongs to the name of his master. But the present reward of such an one, and we may add of his wife and children, who equally shared in those studies which served to alleviate his misfortune, must have been found in the answer of a good conscience and the cheerful gratitude of him whom they delighted to serve. The whole group is a delightful instance of what a united family may achieve in "bearing one another's burdens," and how the greatest of all bodily misfortunes may with such assistance become no obstacle in the pursuit even of subjects which demand the fullest exertion of all our faculties.*

As to Huber himself, we took up his book with the not unreasonable prejudice of not liking to be led by a "blind guide," and with the common notion that all his discoveries had been proved the

* As there is a rose without a thorn, so is there a bee without a sting. Captain Basil Hall discovered these in the neighbourhood of Tampico; and it was one of the highest compliments, and at the same time gratifications, that Huber ever received, when Professor Prevost procured and sent to him a hive of this species in his old age.

mere work of an imagination naturally rendered more lively by being severed from the view of external objects. We confess ourselves to have been entirely misled. Like every enthusiast who ventures to brave the prejudices of satisfied mediocrity by the bold statement of his discoveries, he met with a torrent of ridicule and abuse, which he hardly lived to see stemmed: but, as in the case of Abyssinian Bruce, further research is daily proving his greatest wonders to be true. Though fancy must always throw some little of her colouring over a subject such as this—for all imputation of human motives to such creatures must be merely fanciful—yet Huber's facts are now admitted unchallenged. To him we are indebted for the knowledge that wax is produced from honey, of the impregnation of the queen-bee, of the existence of fertile workers, of artificial queens, of the use of the antennæ, of the senses and respiration of bees, and of endless discoveries in their general economy and management. Many, indeed most, of these things had been suggested before, but Huber, by his earnest zeal and captivating style, achieved for bees what Scott has done for his native lochs and mountains—he wrote them into notice and interest;—and he confirmed or refuted by actual experiment the floating notions of his predecessors, so that, though not positively the first originator of the doctrines that are generally referred to him, and though succeeding ages will doubtless question and improve upon his theories, Huber's name will ever remain in bee-knowledge—what that of Bacon is in inductive

philosophy—and Newton in science—and Watt in steam.*

Dr. Bevan's may be considered the standard work on our domestic bee. He has exhausted every source of information on the subject, whether from old writers or living authorities. We sometimes, perhaps, wish that he had been less chary of his own observations, for he seems often to have allowed them to give place to quotations from other authors. A glance at his "table of contents" will show the varied subjects into which his inquiries branch out, and no where will the bee-master find more pleasing or satisfactory information.

Bees have obtained little notice from the British legislature. In France and other continental kingdoms remission of taxes has sometimes been made in proportion to the number of hives kept by the peasant. The English common-law on the subject

* We can never read any account of Huber without reflecting, with regret, how much his lot would have been lightened, especially after his Maria's death, had he lived to witness the blessed invention of *Books for the Blind*. It was made in France shortly before the Revolution; and down to a very recent period our Blind Asylums derived their supplies from Paris, where several books of the English Bible and the Prayer-Book were executed in raised letters with very fair skill and effect. But in our country, within the last two or three years, one of a rarely gifted brotherhood, Mr. Henry Frere, of Poets' Corner, Westminster, has discovered a new method of raising the impress, which almost rivals in merit the original invention. We have before us part of the Scriptures done in this new style; the page is beautiful to look at; and we know, through the experience of an afflicted friend, how vastly more legible it is to a blind person's finger than the best done in the old way—also how much more durable it is. We trust this note may serve to fix the attention of benevolent persons on this happy novelty, and so further the adoption of it, until the whole Bible at least shall thus be made accessible to the private, the solitary study of the blind.

is also very indefinite. It is a vulgar error to suppose that, if you keep up *ringing*, and are in sight of your bees, you may legally follow them into your neighbour's grounds, or that it is unlawful to keep an empty hive in your garden. Good neighbourship, however, should prove stronger in both these cases than any defects or bonds of law. They almost come under the enactments of the Cruelty to Animals Prevention Act, but not quite; indeed, it would be a very nice question for our courts, whether they are domesticated animals or *feræ naturæ*.

The following story will perhaps settle the question of Tithe bees without the aid of the Commissioners. It is that of an ancient gentleman whose parish priest insisted on having the tenth swarm. After much debate—

“ ‘It shall be done,’ quoth the gentleman. It fortunèd within two daies the gentleman had a great swarme, the which he put into a hive, and toward night carried them home to the parson's house; the parson, with his wife and familie, he found at supper in a faire hall; the gentleman saluted them, and told the parson he had brought him some bees. ‘I, mary,’ quoth the parson, ‘this is neighbourly done; I pray you carry them into my garden.’ ‘Nay, by troth,’ quoth the gentleman, ‘I will leave them even here.’ With that he gave the hive a knock against the ground, and all the bees fell out; some stung the parson, some stung his wife, and some his children and family; and out they ran as fast as they could shift into a chamber, and well was he who could make shift for himself, leaving their meate cold upon the table in the hall. The gentleman went home carrying his emptie hive with him.”—See *Cotton*, p. 102.

We must pass by many curious anecdotes of wild-bee hunting, with which all modern bee-books abound, and the assistance which the bee-cuckoo and honey-ratel afford to one another, and to man. A hunt in the prairies, however, described by Washington Irving, is too good to be omitted.

“ We had not been long in the camp, when a party set out in quest of a bee-tree, and being curious to witness the sport, I gladly accepted an invitation to accompany them. The party was headed by a veteran bee-hunter, a tall lank fellow in homespun garb, that hung loosely about his limbs, and a straw hat, shaped not unlike a bee-hive; a comrade, equally uncouth in garb, and without a hat, straddled along at his heels, with a long rifle on his shoulder. To these succeeded half a dozen others, some with axes, and some with rifles; for no one stirs from the camp without fire-arms, so that he may be ready either for wild deer or wild Indian. After proceeding some distance, we came to an open glade on the skirts of the forest. Here our leader halted, and then advanced quietly to a low bush, on the top of which I perceived a piece of honey-comb. This, I found, was the bait or lure for the wild bees. Several were humming about it, and diving into its cells. When they had laden themselves with honey, they would rise up in the air, and dart off in one straight line, almost with the velocity of a bullet. The hunters watched attentively the course they took, and then set off in the same direction, stumbling along over twisted roots and fallen trees, with their eyes turned up to the sky. In this way they traced the honey-laden bees to their hive, in the hollow trunk of a blasted oak, where, after buzzing about for a moment, they entered a hole about sixty feet from the ground. Two of the bee-hunters now plied their axes vigorously at the foot of the tree, to level it with the ground. The mere spectators and amateurs, in the mean time, drew off to a cautious distance,

to be out of the way of the falling of the tree and the vengeance of its inmates. The jarring blows of the axe seemed to have no effect in alarming or agitating this most industrious community. They continued to ply at their usual occupations—some arriving full-freighted into port, others sallying forth on new expeditions, like so many merchantmen in a money-making metropolis, little suspicious of impending bankruptcy and downfall; even a loud crack, which announced the disrapture of the trunk, failed to divert their attention from the intense pursuit of gain: at length down came the tree with a tremendous crash, bursting open from end to end, and displaying all the hoarded treasures of the commonwealth. One of the hunters immediately ran up with a wisp of lighted hay, as a defence against the bees. The latter, however, made no attack, and sought no revenge; they seemed stupefied by the catastrophe, and, unsuspecting of its cause, remained crawling and buzzing about the ruins, without offering us any molestation. Every one of the party now fell to, with spoon and hunting-knife, to scoop out the flakes of honeycomb with which the hollow trunk was stored. Some of them were of old date, and a deep brown colour; others were beautifully white, and the honey in their cells was almost limpid. Such of the combs as were entire were placed in camp-kettles, to be conveyed to the encampment; those which had been shivered in the fall were devoured upon the spot. Every stark bee-hunter was to be seen with a rich morsel in his hand, dripping about his fingers, and disappearing as rapidly as a cream-tart before the holiday appetite of a schoolboy. Nor was it the bee-hunters alone that profited by the downfall of this industrious community. As if the bees would carry through the similitude of their habits with those of laborious and gainful man, I beheld numbers from rival hives, arriving on eager wing, to enrich themselves with the ruins of their neighbours. These busied themselves as eagerly and cheerily as so many wreckers on an Indiaman that has been driven on shore—plunging into

the cells of the broken honeycombs, banqueting greedily on the spoil, and then winging their way full-freighted to their homes. As to the poor proprietors of the ruin, they seemed to have no heart to do anything, not even to taste the nectar that flowed around them, but crawled backwards and forwards, in vacant desolation, as I have seen a poor fellow, with his hands in his pockets, whistling vacantly and despondingly about the ruins of his house that had been burned. It is difficult to describe the bewilderment and confusion of the bees of the bankrupt hive who had been absent at the time of the catastrophe, and who arrived, from time to time, with full cargoes from abroad. At first they wheeled about in the air, in the place where the fallen tree had once reared its head, astonished at finding all a vacuum. At length, as if comprehending their disaster, they settled down in clusters on a dry branch of a neighbouring tree, from whence they seemed to contemplate the prostrate ruin, and to buzz forth doleful lamentations over the downfall of their republic. It was a scene on which the 'melancholy Jaques' might have moralised by the hour."—*Tour in Prairies*, ch. ix.

"The bee," says an old writer, "is but a year's bird with some advantage." Those "hatched," as Evelyn would say, in May die before the end of the following year. Dr. Bevan, indeed, gives only an average of six months to the worker, and four to the drone. We think that he cuts the life of the worker too short, as no doubt some last till the July of the following year. If his account were correct, the sacrifice of their lives by stifling would not be so great a loss as it would at first appear. But their use the second year is not so much for gathering honey as for tending and nursing the young. The queen-bee, though she does not "live for ever," has

certainly been known to last to a third or even fourth summer: one writer makes the remark on her—which has often been applied to donkeys and post-boys—that he never saw a dead one; but others, Messrs. Cotton and Bagster among the number, have disproved the assertion that the Queen “never dies,” by being fortunate—or unfortunate enough—to have handled a royal carcase; and, since we commenced writing on this subject, one has kindly been forwarded to us by the post. The duration of a bee-colony is of course a very different thing to the life of an individual bee, though they seem, by the ancients especially, often to have been confounded. Columella assigns ten years as the utmost limit to a hive; and though instances are brought forward of a longer period, naturalists seem to be agreed that this would be the ordinary termination of a hive left to itself.* The immediate cause of its falling away is that the bees, in everything else so neat and cleanly, neglect to clear out the exuviae of the grub—the silken cocoon that it spins and casts—from the brood-cells, till, the off-castings of successive generations choking them up and rendering them useless, the race at length degenerates and becomes extinct. Hence the importance of the practice of cutting away yearly, in those stocks which we wish to preserve, some portions of the old comb, which

* Virgil considers the existence of a bee seven years—

“*Neque enim plus septima ducitur ætas.*”

That of a hive endless—

“*Nam genus immortale manet,*” &c.

the bees will continually restore with fresh masonry till, like the ship *Argo*, it retains its original form without an inch of its original material. Cases, however, are stated of the same colony lasting many years. Della Rocca speaks of hives in Syria continuing through forty or fifty summers; and Butler relates a story, of the year 1520, that

“When Ludovicus Vives was sent by Cardinal Wolsey to Oxford, there to be Public Professor of Rhetoric, being placed in the College of Bees,* he was welcomed thither by a swarm of bees; which sweetest creatures, to signify the incomparable sweetness of his eloquence, settled themselves over his head, under the leads of his study, where they have continued above 100 years;”

and they ever went by the name of Vives' Bees.

“In the year 1630 the leads over Vives' study, being decayed, were taken up and new cast; by which occasion the stall was taken, and with it an incredible mass of honey. But the bees, as presaging their intended and imminent destruction (whereas they were never known to swarm before), did that spring (to preserve their famous kind) send down a fair swarm into the President's garden—the which in the year 1633 yielded two swarms; one whereof pitched in the garden for the President; the other they sent up as a new colony into their old habitation, there to continue the memory of this ‘Mellifluous Doctor,’ as the University styled him in a letter to the Cardinal. How sweetly did all things then concord, when in this neat *μουσαϊον*, newly consecrated to the Muses, the Muses' sweetest favourite was thus honoured by the Muses' birds!”

* So called, says Butler, by the founder, in its statutes: *Corpus Christi College* is meant. There is a letter of Erasmus to John Claymond, the first President, addressed J. C., *Collegii Apum Præsidi*. We dare not ask whether the colony is yet extant.

Whatever may be the period which nature or man allots to the life of the queen and the worker, there is one sad inhabitant of the hive who is seldom allowed, even by his own species, to bring his dreary autumn to a natural close. About the middle of August, the awful "massacre of the innocents," the killing of the drones, begins. "After which time," as Butler has it, "these Amazonian dames begin to wax weary of their mates, and to like their room better than their company. When there is no use of them, there will be no room for them. For albeit, generally among all creatures, the males as most worthy do master the females, yet in *these* the females have the pre-eminence, and by the grammarians' leave, the feminine gender is more worthy than the masculine." There is something unavoidably ludicrous in the distresses of these poor Jerry Sneaks. Having lived in a land of milk and honey all the summer long, partaken of the best of everything, without even stirring a foot towards it, coddled and coaxed, and so completely "spoilt," that they are fit for nothing, who can see them "taken by the hind legs and thrown down stairs" with a heap of workers on the top of them—their vain struggles to return—their sly attempts to creep in stealthily—their disconsolate resignation at the last—without thinking it a just retribution for the past years of a pampered and unprofitable life? And yet there is mingled with this feeling a degree of pity for these "melancholy Jaqueses" thrown aside (we mix our characters as in a masquerade) by the

imperious and unrelenting Catherine of the hive. "At first, not quite forgetting their old familiarity, they gently give them Tom Drum's entertainment: they that will not take that for a warning, but presume to force in again among them, are more shrewdly handled. You may sometimes see a handful or two before a hive which they had killed within; but the greatest part fly away and die abroad." We need not name the author we are quoting, who, fearful lest womankind should take this Danaïd character for their example, proceeds: "But let not nimble-tongued sophisters gather a false conclusion from these true premises, that they, by the example of these, may arrogate to themselves the like superiority: for *ex particulari non est syllogizare*; and He that made these to command their males, commanded womankind to be commanded. But if they would fain have it so, let them first imitate their singular virtues, their continual industry gathering, their diligent watchfulness in keeping, their temperance, chastity, cleanliness, and discreet economy, &c.:" and so he sums up all womanly virtues from this little type as if he believed in the transmigration of souls described by Simonides—not him of Cos—in his Iambics. We give the translation as we find it in No. 209 of the 'Spectator':—

"The tenth and last species of women were made out of a bee; and happy is the man who gets such an one for his wife. She is altogether faultless and unblameable. Her family flourishes and improves by her good management. She loves her husband and is beloved by him. She brings

him a race of beautiful and virtuous children. She distinguishes herself among her sex. She is surrounded with graces. She never sits among the loose tribe of women, nor passes away her time with them in wanton discourses. She is full of virtue and prudence, and is the best wife that Jupiter can bestow on man."

What can we do better than wish that all good bee-masters may meet with a bee-wife!

We very much question the truth and utility of the common "moralities" drawn from the industry and prudence of the bee. Storing and hoarding are rather the curse than the requirement of our ordinary nature; and few, except the very young and the very poor, require to have this sermon impressed upon them. We are rather inclined to believe that, had Almighty Wisdom intended *this* to be the lesson drawn from the consideration of the works of His creatures, we should have been referred in His revealed word to the housewifery of this insect "fowl of the air," rather than to the ravens "which have neither storehouse nor barn."

Yet the thrifty bee is never once set before us as a pattern in the Bible. The Wise King indeed, who "spake of beasts, and of fowls, and of creeping things, and of fishes," has referred the sluggard and the distrustful to the early hours, and the "working while it is yet day," and the guideless security of the Ant; but we see nothing in his words which necessarily implies approbation of that anxious carefulness for the morrow, which we are elsewhere expressly told to shun, and which is but too often the mask of real covetousness of heart. And we believe

this the more, because the Ant (to whom we *are* sent), though it wisely provides for its daily bread, *does not* lay up the winter store wherewith to fare sumptuously every day.

We know that, in saying this, we are flying into the uplifted eyes of careful mothers and bachelor uncles, who time out of mind have quoted, as it has been quoted to them, the busy bee as the sure exemplar of worldly prudence and prosperity; but we think that we can show them a more excellent way even for earthly honour, if they, as Christ's servants, will content themselves with those types in the natural world which He himself has given them, and learn that quiet security, and trustful contentedness, and ready obedience, and active labour for the present hour, which He has severally pointed out to us in the lilies, the ravens, the sheep, and the emmets, rather than seek elsewhere for an emblem of that over-curious forecasting for the future, which, whether in things spiritual or temporal, is plainly discouraged in the word of God—those laws and judgments of the Lord which *are sweeter than the honey and the honeycomb*, and in the keeping of which “there is great reward.”

“Take that; and He that doth the ravens feed,
Yea, providently caters for the sparrow,
Be comfort to my age!”

Not but that the bee affords us a moral, though it be not that which worldly wisdom commonly assigns to it. We have in the first place a direct cause for thankfulness in the delicate food with which it

supplies us. "The bee is little among such as fly; but her fruit is the chief of sweet things" (*Ecclus.* xi. 3); and the Almighty has, in many senses, and in no common cases, supplied the houseless and the wanderer with "wild honey" and "a piece of honeycomb," and "honey out of the stony rock;" and "a land flowing with milk and honey" has been from the first the type of another and a better country. And the little honey-maker is itself indeed one of the most wonderful proofs of the goodness and power of God. That within so small a body should be contained apparatus for converting the "virtuous sweets" which it collects into one kind of nourishment for itself—another for the common brood—a third for the royal—glue for its carpentry—wax for its cells—poison for its enemies—honey for its master—with a proboscis almost as long as the body itself, microscopic in its several parts, telescopic in its mode of action—with a sting so infinitely sharp, that, were it magnified by the same glass which makes a needle's point seem a quarter of an inch, it would yet itself be invisible, and this too a hollow tube—that all these varied operations and contrivances should be enclosed within half an inch of length and two grains of matter, while in the same "small room" the "large heart" of at least thirty* distinct instincts is contained—is surely enough to crush all thoughts of atheism and materialism, without calling in the aid of twelve heavy volumes of Bridgewater Treatises.

* Kirby and Spence, *Introd. to Ent.*, ii. 504.

But we must hasten to end this too long paper. Its readers generally will be above that class to whom profit, immediate or remote, from bee-keeping can be of any serious moment—though indeed the profit lies in saving the bees, not in killing them. But many prejudices have to be done away, and greater care bestowed, and a better knowledge of their habits acquired, before the murdering system can be eradicated from the poor. It is for the higher classes to set the example by presents of cheap and simple but better-constructed hives—by personal interest taken in their bee-management—by supplying them with the best-written books on the subject—above all, by adopting the merciful system in their own gardens, and intrusting their hives to the especial care of one of the under-gardeners, whose office it should be, not only to diligently tend and watch his master's stock, but also to instruct the neighbouring cottagers in the most improved management. It would be an excellent plan to attach a stall of bees to the south wall of a gardener's cottage or lodge, with a glass side towards the interior, so that the operations of the bees might be watched from within. The custom of placing them within an arched recess in the wall of the house was one of old Rome, and is still observed in some countries. We look upon this as a very pretty suggestion for a fancy cottage in any style of architecture. Perhaps the directors of our normal schools would find no better way of teaching their pupil-schoolmasters how to benefit and gain an influence among the parents

of the children they will have to instruct, than to put them in the proper way of making and managing the new kinds of cottage-hives, of taking honey, joining stocks, and hybernating the bees. We spoke in a late article of Gardening being a common ground for the rich and poor. We would mark this difference with regard to bees, that we consider them especially the "poor man's stock." No wealthy man should keep large colonies of them for profit in a neighbourhood where there are cottagers ready to avail themselves of the advantage. A hive or two in the garden—good old-fashioned straw-hives—for the sake of their pleasing appearance and kindly associations, and for the good of the flowers—is only what every gentleman would delight to have; or, if he has time to devote to their history, an observatory-hive for study and experiment; but beyond this we think he should not go,—else he is certainly robbing his poorer neighbours. The gentleman-bee-master, like the gentleman-farmer, should only keep stock enough for encouragement and experiment, and leave the practical and the profitable to the cottager and the tenant. But the squire's hive and implements should be of the best construction, for example's sake; and, keep he bees or beasts, he should be "a merciful man" to them. And surely the feeling mind will pause a little at the destruction of a whole nation—the demolition of a whole city, with all its buildings, streets, and thoroughfares, its palaces, its Queen, and all! What an earthquake to them must be the moving of the hive! What a tempest of fire

and brimstone must the deadly fumes appear ! All their instincts, their senses, their habits plead for them to our *humanity* ; and, even if we allege their sting against them, they may reply with scarcely an alteration in the Jew's words—"Hath not a bee eyes? hath not a bee organs, dimensions, senses, affections, passions? fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer, as a Christian is? If you prick us, do we not bleed? if you tickle us, do we not laugh? if you poison us, do we not die? and if you wrong us, shall we not revenge? *If we are like you in the rest, we will resemble you in that.*"*

We said, if any man would keep bees, he must make them his friends ;—nay, that is a cold word—he must love them. De Gelien makes the remark,—

* The subjects of hibernating bees and of joining swarms are so very important in good bee-keeping, that, being connected with one another, we must say a word, though a short one, upon them. Though the opposite opinion has been stoutly maintained, it is now generally admitted that a united stock does not consume so much honey in the winter as the two swarms separately would have done. But in order to save the consumption of honey at this time, the bees must be kept as torpid as possible, and this is best done by placing them in a cold, dark, but dry room. If you have not this convenience, move the doors from the north of your bee-house to the south, so that the winter sun, being prevented from shining on the entrance side, will not enliven and draw out the bees when the snow is on the ground. This most fatal circumstance it is most essential to guard against. However, the most general and the shortest rule is, send your bees off to sleep in good condition in the autumn (*i. e.* supply them with plenty of food then), for all hibernating animals are fat at the beginning of their torpidity, and it is fat people who fall fastest to sleep after dinner : keep them torpid, by even coolness and dryness, as long as you can. No bee-master will ever be successful who does not take pains of some sort to effect these objects.

which we have heard before of figs, and olives, and medlars, and truffles, or of an equivocal dish recommended by a host,—that you must either like them very much or not at all. “*Beaucoup de gens aiment les abeilles: je n’ai vu personne qui les aime médiocrement; on se passionne pour elles!*” It was this love, we suppose, that led Mahomet to make an exception in their favour when all other flies were condemned;—that made Napoleon, who laughed at the English as a nation of shopkeepers, select this emblem of industry, in place of the idle lily,

“That tasks not one laborious hour.”

And Urban VIII. and Louis XII. adopted them as the device on their coat of arms; and Camdeo, the Cupid of Buddhism, strung his bow with bees! The Athenians ranked the introduction of the bee among their great national blessings, tracing it up to Cecrops, “the friend of man,”—the Attic Alfred; and such regard is still paid to them in many parts of the south of England, that no death, or birth, or marriage takes place in the family without its being communicated to the bees, whose hive is covered in the first case with a piece of black cloth, in the two latter with red. The 10th of August is considered their day of Jubilee, and those who are seen working on that day are called Quakers. Omens were wont to be taken from their swarming; and their settling on the mouths of Plato and Pindar was taken as a sure presage of the sweetness of their future eloquence and poetry; though these legends are

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somewhat spoiled, by the same event being related of the infancy both of Lucan and of St. Ambrose, called, as was *Vives* afterwards, the Mellifluous Doctor. We all know of Nestor's "honeyed" words, and Xenophon, "*cujus sermo est melle dulcior.*" Apiarian Societies have been formed all over the world for their study and cultivation, as the Franconian, the Bavarian, the Lusatian, those of Vienna and Norfolk, and the defunct one of Oxford. Bees have not only dispersed a mob, but defeated an Amurath with his Janissaries;* but it would be quite impossible in a sketch like this to attempt to give anything like a full account of their many honours and achievements, and of the extraordinary instinct displayed by them in every operation of their manifold works. Our object in these remarks has been rather to stimulate the novice in this subject than to give any complete history of their habits, or to put forth any new discovery or system of our own. We have introduced our little friends with our best grace, and must leave them now to make the best of their way with our readers.

" So work the Honey Bees :
Creatures that, by a rule in nature, teach
The art of order to a peopled kingdom.
They have a king, and officers of sorts :
Where some, like magistrates, correct at home ;

* The Abbé della Rocca relates that, "when Amurath, the Turkish emperor, during a certain siege, had battered down part of the wall, and was about to take the town by assault, he found the breach defended by bees, many hives of which the inhabitants had stationed on the ruins. The Janissaries, although the bravest soldiers in the Ottoman empire, durst not encounter this formidable line of defence, and refused to advance."

Others, like merchants, venture trade abroad ;
 Others, like soldiers, armed in their stings,
 Make boot upon the summer's velvet buds ;
 Which pillage they with merry march bring home
 To the tent royal of their emperor :
 Who, busied in his majesty, surveys
 The singing masons building roofs of gold ;
 The civil citizens kneading up the honey ;
 The poor mechanic porters crowding in
 Their heavy burdens at his narrow gate ;
 The sad-eyed justice, with his surly hum,
 Delivering o'er to executors pale
 The lazy yawning drone."

Henry V. a. 1, s. 2.

Who would not affirm, from this and other incidental allusions, that Shakspeare had a hive of his own? Dr. Bowring has only been able to discover in them "galleries of art and schools of industry, and professors teaching eloquent lessons;" perhaps our friend means Mechanics' Institutes, and travelling lecturers.

Pope makes the bee our schoolmaster in another sense, and bids us, besides its monarchy,

"The arts of building from the Bee receive ;"

and Butler, in a list of proverbial attributes that reminds one of a string of epithets in our old 'Gradus,' recommends his readers to be as "profitable, laborious, busy, loyal, swift, nimble, bold, cunning, chaste, and neat," as a bee. Without running into all this enthusiasm, or forcing her example beyond what is written in the Bible, she may often, "though she has neither speech nor language," appeal to her masters in her Hebrew name, and be to us "DEBORAH,"—"she that speaketh."

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS,
STAMFORD STREET.



